



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

March 19, 2008

Mr. Jeffrey G. Waterman
Liberty Pumps, Inc.
7000 Apple Tree Avenue
Bergen, NY 14416

Dear Mr. Waterman:

I am writing at the request of the Michigan State Plumbing Board to address their concerns as stated in a recent board meeting following a review of your instructional changes.

The board made the following motion at their February 6, 2008 board meeting:

A **MOTION** was made by Board Member Swindell and supported by Board Member Jones to table the product request. The board requested that Mr. Konyndyk create a letter indicating that the product information is unclear and request the applicant meet before the next State Plumbing Board to address their concerns. **MOTION CARRIED.**

I am including a portion of my January 31, 2008 letter which summarizes their concern.

It is the opinion of this office that your manufacture installation instructions mandating a RPZ as an IAPMO or UPC requirement do not meet the intentions of the Michigan State Plumbing Board. While we readily agree with their requirement this state does not utilize the Uniform Plumbing Code. This difference of code application may confuse purchasers and installers resulting in a device unacceptable to both agencies. Further, I am confident the board will not support your position that the sumps may be classified as a low hazard application.

Please contact me by telephone at (517) 241-9330 if you would be available to discuss this matter with the board at their next regularly scheduled board meeting, June 3, 2008, at our office.

Sincerely,

Robert G. Konyndyk, Chief
Plumbing Division

RGK/mkr

Providing for Michigan's Safety in the Built Environment

BUREAU OF CONSTRUCTION CODES
P.O. BOX 30254 • LANSING, MICHIGAN 48909
Telephone (517) 241-9330 • Fax (517) 373-8547
www.michigan.gov

State Plumbing Board Minutes
February 6, 2008

7. **PRODUCT APPROVAL**

Liberty Pumps Inc. – Emergency Sump Pump - BCCP-06-019

Mr. Konyndyk provided the board the products revised installation procedures from Liberty Pumps Inc. for an emergency sump pump.

A **MOTION** was made by Board Member Swindell and supported by Board Member Jones to table the product request. The board requested that Mr. Konyndyk create a letter indicating that the product information is unclear and request the applicant meet before the next State Plumbing Board to address their concerns. **MOTION CARRIED.**

Liberty Pumps™

Model SJ10

New!
SHARKBITE®
Fitting

2
YEAR
WARRANTY

SUMP JET™

Water Powered Back-Up Pump

**Protects
basement during
power outages!**

Requires no electricity

Features:

- Works off municipal water supply*
- Accepts 20PSI up to 100PSI inlet supply pressure**
- Fully automatic
- High-output flow rates
- Compact design
- Fully-assembled
- 1-1/2" Discharge
- 3/4" NPT water inlet connection
- UPC approved (IAPMO PS 119-2005)
- SHARKBITE® inlet connection accepts pex or copper 3/4" line

*Efficient design removes more
water per gallon used*

* The SJ10 requires an uninterrupted water source to operate. If you have a well pump, the SJ10 will not operate during power outages

**SJ10 pumping performance varies with inlet water source pressure and pumping head. See complete specifications and performance chart for expected flow rates.

SHARKBITE® is a registered trademark of the CASH ACME Co.

innovate. evolve.

Petition Application for Approval of Material, Product or Method
Michigan Department of Labor & Economic Growth
Bureau of Construction Codes
P.O. Box 30255, Lansing, MI 48909
www.michigan.gov/bcc

Agency Use Only

Application Fee: \$500.00

Authority: 1972 PA 230

Completion: Mandatory

Penalty: Use of material, product or method will not be approved

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PRODUCT INFORMATION			
NATURE OF APPLICATION			
<input type="checkbox"/> Material	<input checked="" type="checkbox"/> Product	<input type="checkbox"/> Method of Manufacture or Construction	<input type="checkbox"/> Component
CODE UNDER WHICH APPROVAL IS SOUGHT			
<input type="checkbox"/> Building (140)	<input type="checkbox"/> Electrical (115)	<input type="checkbox"/> Mechanical (130)	<input checked="" type="checkbox"/> Plumbing (98)
NAME OF MATERIAL, PRODUCT OR METHOD OF MANUFACTURE (Limit To One Item Per Application)			
MACERATING SYSTEMS			
OTHER IDENTIFICATION (Model Number)			
SAMPUS, SANIBEST, SANERINO, SANICAD (AND SANIFLUSH: TOILET).			
DESCRIPTION (Use Additional Sheets If Necessary)			
MACERATING SYSTEMS ARE USED WHERE NO GRAVITY FLOW EXISTS IN ORDER TO PUMP UP WASTES INTO A SEWER SYSTEM.			
INTENDED USE (Use Additional Sheets If Necessary)			
RESIDENTIAL AND LIGHT COMMERCIAL APPLICATIONS			
DATA SUBMITTED			
<input type="checkbox"/> Letter	<input type="checkbox"/> Manual	<input checked="" type="checkbox"/> Standards	<input checked="" type="checkbox"/> Installation Instructions
<input type="checkbox"/> Display Catalog	Reports		<input type="checkbox"/> Product Sample or Model
	<input type="checkbox"/> ICC - NES	<input type="checkbox"/> BOCA - NES	<input type="checkbox"/> Prior Approvals by Other Agencies
	<input type="checkbox"/> ICBO	<input type="checkbox"/> SBCC	<input checked="" type="checkbox"/> Recommendations by Model Code Bodies
	<input type="checkbox"/> NRB	<input checked="" type="checkbox"/> Other IAPMO	
LABORATORY TEST BY			
CSA - INTERNATIONAL			
PILOT SERVICE EXPERIENCE AND CONDITIONS (Use Additional Sheets If Necessary)			
RESTRICTIONS FOR USE (Use Additional Sheets If Necessary)			

NAME OF COMPANY		APPLICANT NAME	
SFA SANIFLO INC.		JOHAN BOWEN	
ADDRESS			
105 NEWFIELD AVE, SUITE A & B			
CITY	STATE	ZIP CODE	TELEPHONE NUMBER (Include Area Code)
EDISON	NJ		
APPLICANT SIGNATURE (Must be an original signature)		DATE	FAX NUMBER (Include Area Code)
Johan Bowen		JAN. 15 2008	

Instructions for Petition Application for Approval of Material, Product or Method

Nature of Application: Check the appropriate box. A component is a preassembled unit of different materials or products that will be incorporated into a building.

Code Under Which Approval is Sought: Check all codes that apply. There may be requirements in 2 or more codes for the approval sought.

Name of Material, Product or Method of Manufacture: Provide the name of the material, product or method.

Other Identification: Provide the model numbers.

Description: Provide a description of the material, product, method or component.

Intended Use: Give a brief description of how the product is incorporated into a building or structure and its purpose.

Data Submitted: Check the appropriate boxes and submit the required number of copies as listed below:

Building Code - 3 copies

Electrical Code - 15 copies

Mechanical Code - 18 copies

→ Plumbing Code - 11 copies

Only one sample is to be submitted when practical.

Laboratory Test By: List all tests performed and provide copies as listed above.

Pilot Service Experience and Conditions: Provide report of finding as listed above.

Restrictions for Use: Identify any restrictions or conditions of use.

Applicant: Provide all information requested.

WILL BE SUBMITTED UNDER SEPARATE COVER.

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Okemos, MI 48864

Validation Area



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

February 14, 2008

Mr. Johan Bouwer
SFA Saniflo Inc.
105 Newfield Ave
Suite A & B
Edsion, New Jersey 08837

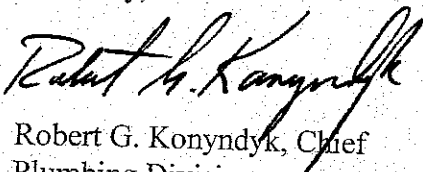
Dear Mr. Bouwer:

I am writing to inform you of the status of your product approval application for the SFGA Saniflow macerating water closet systems.

This office has received your application and fee however, supporting documentation has not been provided. Please be advised that your product will not be considered for any further action at this time without conformance documentation. Further, our records indicate that your company previously applied for consideration March 27, 1990. The application was denied by the State Plumbing Board at their June 6, 1990 board meeting.

If you have any further questions, please contact me at 517/241-9330.

Sincerely,



Robert G. Konyndyk, Chief
Plumbing Division

RGK/mkr

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The American Society of
Mechanical Engineers

A N A M E R I C A N N A T I O N A L S T A N D A R D

MACERATING TOILET SYSTEMS AND RELATED COMPONENTS

ASME A112.3.4-2000

Date of Issuance: August 15, 2000

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FOREWORD

This Standard relates to performance requirements for macerating toilet systems. Such systems are designed for installation in bathrooms of buildings where the building drainage system is located at an elevation above the floor level or where a bathroom is located some distance from the building drain connection.

The initial draft of this Standard was prepared by an ad hoc committee of the International Association of Plumbing and Mechanical Officials (IAPMO). It was then referred to the American Society of Mechanical Engineers (ASME) and was assigned to Project Team 3.4 of the ASME A112 Standards Committee for development as an American National Standard. The resulting proposal was harmonized with CSA B45.9, which was developed by the CSA Technical Committee on Plumbing Fixtures.

Suggestions for improvement of this Standard will be welcomed. They should be sent to The American Society of Mechanical Engineers, Attn: Secretary, A112 Main Committee, Three Park Avenue, New York, NY 10016.

This Standard was approved as an American National Standard on June 22, 2000.

ASME STANDARDS COMMITTEE A112

Standardization of Plumbing Materials and Equipment

(The following is the roster of the Committee at the time of approval of this Standard.)

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R. E. White, Richard E. White & Associates
W. C. Whitehead, Plumbing & Drainage Institute

PERSONNEL OF PROJECT TEAM 3.4 — MACERATING SYSTEMS

J. Bouwer, *Project Team Leader, Sanitary for All Ltd.*

P. V. DeMarco, *American Standard, Inc.*

P. J. Higgins, *PJ Higgins & Associates, Inc.*

M. T. Kabel, *IAPMO*

S. Rawalpindiwala, *Kohler Co.*

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MACERATING TOILET SYSTEMS AND RELATED COMPONENTS

1 GENERAL

1.1 Scope

This Standard establishes physical, performance, and testing requirements applicable to macerating toilet systems and related components. Such systems are intended to collect waste from a single water closet, lavatory, and/or bathtub located in the same room, and grind and pump these macerated wastes to some point in the sanitary drainage system.

The macerating system is comprised of three major components:

- (a) a container that houses the operating mechanisms;
- (b) a pressure chamber that automatically or manually activates and deactivates the induction motor; and
- (c) an induction motor that drives the shredder blades and pump assembly, which is permitted to be combined into a single unit.

The use of alternate materials or methods is permitted, provided it can be demonstrated that such alternatives comply with the performance requirements of this Standard.

1.2 Units of Measurement

Values are stated in U. S. Customary units and the International System of Units (SI). The U. S. Customary units shall be considered as the standard.

1.3 Reference Standards

The following documents form a part of this Standard to the extent specified herein. The latest issue shall apply.

ASTM C1173, Flexible Transition Couplings for Underground Piping Systems

Publisher: American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428

CSA B22.1, Liquid Pumps

CSA B45, Plumbing Fixtures

CSA B602, Mechanical Couplings

Publisher: Canadian Standards Association (CSA), 178 Rexdale Boulevard, Toronto, ON, M/M 1R3

ANSI Z124.4, Plastic Water Closet Bowls and Tanks
Publisher: International Association of Plumbing and Mechanical Officials (IAPMO), 2001 South Walnut Drive, Walnut, CA 90601

ASME A112.19.2M, Vitreous China Plumbing Fixtures
Publisher: The American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990; ASME Order Department: 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300

UL 778, Motor Operated Water Pumps

Publisher: Underwriter's Laboratories (UL), 333 Pfingsten Road, Northbrook, IL 60062

2 PHYSICAL REQUIREMENTS

2.1 Water Closets

Water Closets that connect into the macerating system shall comply with either ASME A112.19.2 or CSA B45. The drill line carry test shall not be required. The minimum water spot of the bowl shall not be less than 5 in. x 4 in. (115 mm x 102 mm). The performance of the water closet shall be tested prior to connection to the macerating unit.

2.2 Macerating Tank and Components

2.2.1 Macerating Tank. The macerating tank assembly shall be watertight, leakproof, and protected from backflow of sewage. The macerating tank shall be free from cracks, porosity, chips, flash, and other significant defects that may effect the performance, appearance, or serviceability of the system. The tank shall comply with the resistance to staining, the wear and cleanliness, and the chemical resistance tests of ANSI Z124.4 for plastic sumps.

2.2.2 Electrical System. The electrical system in the macerating unit shall be certified by a recognized national testing laboratory.

2.2.3 Pump. The pump shall comply with either UL 778 or CSA B22.1 and meet the performance requirements of Section 3.

2.2.4 Fastening. A means to fasten the water closet to the holding tank shall be provided.

2.2.5 Backflow Prevention. A check valve shall be provided with the macerating system to prevent the return of discharged wastes to the macerating tank. The check valve in the holding tank shall be capable of resisting a pressure of 12 ft (3.6 m) of water.

2.2.6 Accessibility. The holding tank shall provide for accessibility of the internal working components.

2.2.7 Discharge Piping. The minimum size of the discharge piping shall be $\frac{1}{4}$ in. (19 mm).

2.2.8 Venting. The sump shall be vented in accordance with the manufacturer's instruction with a vent size of not less than $1\frac{1}{4}$ in. (32 mm).

2.2.9 Function. The macerating toilet system shall dispose of the contents of the water closet upon activation of the flushing mechanism in accordance with para. 3.2. The macerating pump shall be capable of discharging the grounded waste to a vertical height of 12 ft (3.6 m).

2.3 Gaskets and Tension Bands

2.3.1 Gaskets. Piping gaskets shall be watertight when tested according to Section 3. Gaskets shall comply with either ASTM C1173 or CSA B602.

2.3.2 Tension Bands (Clamps). Tension bands (clamps) used to connect the fixture with the macerating tank gasket shall comply with the tension band performance tests in either ASTM C1173 or CSA B602.

2.4 Instructions

2.4.1 Installation Instructions. Each unit shall be provided with installation instructions addressing capabilities, connections to the unit, electrical requirements, other plumbing requirements, and related safety concerns.

The installation instructions shall indicate the installation of a ball or gate valve downstream of the check valve and that all fixtures, which are served by the macerating tank, are to be on the same floor level as the tank.

2.4.2 Owner/Operator Instructions. Instructions for the proper operation of the system shall be provided with the unit. The instructions shall indicate the proper use of the product including prohibited uses and applications for the product. The instructions shall

MACERATING TOILET SYSTEMS AND RELATED COMPONENTS

be marked on the cover with instructions to the installer to leave the manual with the owner/operator for future reference.

3 TESTING

3.1 Cycle Testing

3.1.1 Test Method. The macerating pump shall be "on/off" tested for 50,000 cycles.

3.1.2 Acceptance Criteria. Upon completion of the cycle testing, the unit shall demonstrate the ability to meet the performance requirements as outlined in paras. 3.2 and 3.3.

3.2 Paper Test of the Assembled Unit

3.2.1 Test Method. The macerating unit and water closet shall be assembled together in accordance with the manufacturer's instructions. The discharge piping from the unit shall be installed to a maximum elevation as stated by the manufacturer. A check valve shall be installed within the discharge line. Waste piping of a diameter recommended by the manufacturer shall be installed vertically for 12 ft (3.6 m) of discharge and then directed to a safe place of discharge. The water closet shall be filled with water and pressurized to the minimum pressure as recommended by the manufacturer. Two thousand sheets of heavy, single-ply toilet paper shall be weighed, then separated into four sets of 50 ten-sheet lots. Ten sheets of heavy, single-ply toilet paper shall be distributed evenly in the water closet bowl and the unit shall be flushed. With each successive flush, there shall be no evidence of paper returning to the bowl. After conducting 50 consecutive flush tests, three additional flushes without paper shall be made. The water closet shall then be removed from the housing unit and the internal walls and bottom of the housing shall be inspected for any collection of paper. Continue to conduct this test for an additional 150 cycles, stopping after every 50-paper/three-no-paper cycle in order to inspect the internal housing for paper collection. After completion of the cycle tests, all paper clinging to the walls and the bottom of the tank shall be removed, dried, and weighed.

3.2.2 Acceptance Criteria. Not more than 5% of the total weight of the 2,000 sheets shall remain in the sump after testing. If a grill is provided, there shall be no more than 50% blockage of the surface area, as determined by visual inspection. Failure of the unit

to meet these criteria, as applicable, shall be cause for the rejection of the unit.

3.3 Hydrostatic Pressure Test of the Check Valve

3.3.1 Test Method. The holding tank shall be installed in accordance with the manufacturer's instructions. The tank check valve shall be subjected to a hydrostatic pressure of 12 ft (3.6 m) of water.

3.3.2 Acceptance Criteria. The tank check valve shall withstand the test without any signs of leakage.

4 MARKING AND IDENTIFICATION

The macerating system shall be marked with the following information:

- (a) the manufacturer's name or trademark;
- (b) the model number; and
- (c) ASME A112.3.4.

ASME STANDARDS RELATED TO PLUMBING

Air Gaps in Plumbing Systems.....	A112.1.2-1991(R1998)
Performance Standard and Installation Procedures for Stainless Steel Drainage Systems for Sanitary, Storm, and Chemical Applications, Above and Below Ground.....	A112.3.1-1993
Water Heater Relief Valve Drain Tubes.....	A112.4.1-1993(R1998)
Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System.....	A112.4.3-1999
Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use.....	A112.6.1M-1997
Backwater Valves.....	A112.14.1-1975(R1998)
Plumbing Fixture Fittings.....	A112.18.1-2000
Performance Requirements for Backflow Protection Devices and Systems in Plumbing Fixture Fittings.....	A112.18.3M-1996
Flexible Water Connectors.....	A112.18.6M-1999
Deck Mounted Bath/Shower Transfer Valves With Integral Backflow Protection.....	A112.18.7-1999
Enameled Cast Iron Plumbing Fixtures.....	A112.19.1M-1994(R1999)
Vitreous China Plumbing Fixtures.....	A112.19.2M-1998
Stainless Steel Plumbing Fixtures (Designed for Residential Use).....	A112.19.3M-1987(R1996)
Porcelain Enameled Formed Steel Plumbing Fixtures.....	A112.19.4M-1994(R1999)
Trim for Water-Closet Bowls, Tanks, and Urinals.....	A112.19.5-1999
Hydraulic Performance Requirements for Water Closets and Urinals.....	A112.19.6-1995
Whirlpool Bathtub Appliances.....	A112.19.7M-1995
Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances.....	A112.19.8M-1987(R1996)
Non-Vitreous Ceramic Plumbing Fixtures.....	A112.19.9M-1991(R1998)
Dual Flush Devices for Water Closets.....	A112.19.10-1994
Wall Mounted and Pedestal Mounted, Adjustable and Pivoting Lavatory and Sink Carrier Systems.....	A112.19.12-2000
Floor Drains.....	A112.21.1M-1991(R1998)
Roof Drains.....	A112.21.2M-1983
Hydrants for Utility and Maintenance Use.....	A112.21.3M-1985(R1995)
Cleanouts.....	A112.36.2M-1991(R1998)

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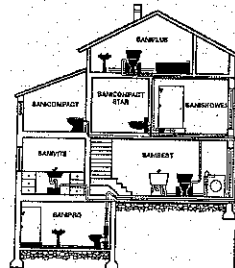
This product must be installed in strict accordance with the plumbing codes.
Product should be installed by a licensed plumber.



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INSTRUCTIONS D'INSTALLATION ET D'ENTRETIEN**

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install a toilet or bathroom anywhere you like

Dear Customer,

Thank you for purchasing a macerating toilet system. We are sure that it will provide you with the luxury of additional bathroom facilities that would otherwise be impractical or too expensive to consider.

Our units have been marketed for many years throughout Europe and North America; our confidence in these products is such that we provide a limited two-year warranty against faulty workmanship or components of the macerating pump unit. Before commencing with the installation please carefully read the installation instructions.

Enclosed with the product you will find a warranty registration card and a questionnaire, please fill out both and return it to us within seven workdays. Please note that this information is for own use and will not be sold or otherwise made public.

In the event of a warranty claim, non-registered claimants will have to provide proof of purchase to verify your warranty claim, thus delaying possibly repairs.

We kindly ask your help in filling out the questionnaire, this will greatly assist us in improving our customer service still further, upon receipt of the warranty card and questionnaire we mail you a small gift for your help.

Thank you for your confidence in our products, which we are sure, will provide complete satisfaction.

Yours faithfully,

SEA-SANIFLO INC.

P.S. In unfortunate event that a repair is necessary, please contact us first and contact your installer or reseller second. There are many cases of delays because your complaint is not forwarded in time.

P.P.S. it is very important for us to receive and register your warranty card. This will not only give us the opportunity to update you on future product releases and update you on technical details but also to inform you of possible bonus/incentive program for registered users only.

Madame, Monsieur,

Nous vous remercions d'avoir acheté un broyeur-pompe.

Nos broyeur-pompes se vendent partout en Europe et en Amérique du Nord, depuis plusieurs années. Nous offrons une garantie limitée de deux ans sur les pièces et la main-d'œuvre pour l'ensemble broyeur-pompe. Avant d'installer votre nouveau broyeur-pompe, veuillez lire attentivement les instructions d'installation.

Une carte d'enregistrement de la garantie, ainsi qu'un questionnaire, accompagnent le produit. Nous vous prions de les remplir et de nous les retourner dans un délai de sept jours ouvrables. Veuillez prendre note que ces renseignements sont strictement confidentiels et qu'ils ne seront pas vendus ni publiés.

Nous attirons votre attention sur le fait qu'en cas de réclamation aux termes de la garantie, les clients dont la garantie n'a pas été enregistrée doivent fournir une preuve d'achat à l'appui de leur réclamation, ce qui retarde les travaux de réparation.

Nous vous prions de bien vouloir remplir le questionnaire, car cela nous aidera à améliorer notre service à la clientèle. Dès réception de la carte d'enregistrement de la garantie et du questionnaire dûment remplis, nous vous enverrons un petit cadeau par la poste pour vous remercier de votre collaboration.

Nous vous remercions pour la confiance que vous nous avez témoignée en achetant un de nos produits.

Cordialement,

SEA-SANIFLO INC.

P.S. Si vous aviez à faire réparer l'appareil, veuillez communiquer avec nous puis avec votre installateur. Des retards sont souvent occasionnés à cause du fait que la plainte du client n'est pas acheminée à temps.

P.S. Il est très important pour nous de recevoir et d'enregistrer votre carte de garantie. Vos coordonnées nous permettront de vous renseigner sur nos nouveaux produits ou de nouvelles données techniques, ainsi que sur notre programme de motivation et de primes à l'intention des acheteurs inscrits.

1 INTRODUCTION

The macerating system can simultaneously receive wastewater from several sanitary fixtures, e.g. bidet, hand basin, shower, bathtub, urinal, but only one water closet per unit.

Macerating systems are designed for the disposal of human waste, toilet paper and water. They are not intended to replace kitchen waste, neither are they intended to be used for the disposal of waste water from such pumped appliances as dishwashers and clothes washers.

Sanitary fixtures connected to the macerating system must be located on the same level.

GENERAL DESCRIPTION

The macerating system is a residential pumping system for toilet and bathroom fixtures. The macerator pump unit connects to the outlet of a rear spigot outlet toilet. The system is comprised of three major components: the macerator unit, the toilet bowl and the toilet tank.

The macerator unit also consists of three major parts: the container which houses the operating mechanism; a pressure chamber which automatically activates and deactivates; the induction motor which drives the cutter blade and the impeller.

BREATHING OPENING (Scheme 2 spare part 1)

The macerating pump unit is factory equipped with an air pressure-equalizing opening in the lid. **Please note that this breather opening should be blocked off by plastic cap provided with the product (for Sanipius/Sanipro) or use in North America. (See connection to a vent system).**

SANITARY INLETS

The macerating pump unit is equipped with two additional 1 1/2" inlets, one on either side of the case. These inlets, which incorporate an internal check valve, are used to connect the drainpipe of other sanitary fixtures to the macerating pump unit.

Note: In case none of the inlets are used by other fixtures, you will need to block off the inlet with the plugs provided.

BATHTUB

Any regular bathtub can be used, as only the drainpipe connects to the macerating unit. When installing a bathtub, one should build a platform out of 2 x 8-inch lumber, on which the tub is placed. This gives enough space for a p-trap and slope toward the wastewater inlets. (See note 1 & 2).

SHOWER STALL

When installing a shower a special raised shower base may be purchased. This eliminates the building of a platform. Alternatively, you may want to purchase a regular shower and also build a platform for it. (See note 1 & 3).

Note:

1. Platform height. The actual distance between the p-trap of the additional fixture and macerating pump determines the necessary clearance to install the p-trap and elevation required to ensure a minimum gravity flow of 1/4-inch per foot.
2. The Sanipius and Sanibest system will be able to handle either a shower or a bathtub.
3. The Sanipro system will handle a shower only.

NORMAL OPERATING CYCLE

As the flush is operated or as the bath, shower and lavatory discharges, the water and waste matter enter the unit and the water level begins to rise, triggering the micro-switch in the pressure chamber. This in turn activates the motor and pump. The shredded matter is picked up by the impeller pump and discharged through a 3/4" outlet pipe to a sanitary sewer or soil stack.

Safety note: For safety the macerating unit should never be activated with the lid removed.

2 INSTALLATION

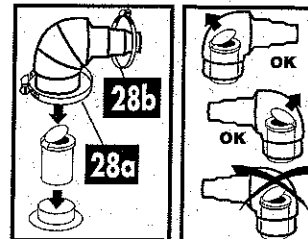
PREPARING THE MACERATING PUMP UNIT

(See scheme 2)

Push flapper check assembly into opening, ensuring that the opening of the flapper faces in the same direction as the elbow, in same way as for the outlet elbow. Push rubber elbow onto the shoulder and secure with a gearclamp.

CAUTION

- Point the non-return flap so that it opens in the direction of flow of the discharge pipe.
- Secure the base of the discharge elbow with clip **28a** and the discharge pipe end with clip **28b**.



At this point you may wish to connect the pipe work from the other sanitary fixtures connected to the macerating system, (see Connection to discharge pipe work & soil stack).

WATER CLOSET ASSEMBLY

The tank comes with the fill and flush valve assembled, however, please ensure that all screws, nuts, etc. are tightened.

SYSTEM ASSEMBLY

1. Place the macerating pump unit in the desired spot and connect all inlet and outlet waste piping to the unit. (See Connection to discharge pipe work).
2. Place the spigot outlet of the toilet bowl firmly against the white accordion connector and mark the floor through the holes in the bowl.
3. Remove bowl and bore two holes approximately 2 1/4" deep with a 5/16" masonry drill bit. Insert plastic plugs into holes. If the floor is wood, bore a pilot hole with a 1/4" drill bit.
4. Place the bowl in front of the macerating pump unit and pull the accordion gasket all the way onto the rear spigot outlet. Attach with supplied gear clamp. Check that gasket and clamp are even all around.
5. Move the bowl over the holes in floor. Slip the plastic china protectors over the lag screws. Tighten lag screws (do not over tighten) and snap plastic cover caps in place.
6. Locate the tank to bowl kit and place foam gasket on the spud of the flush valve and over nut. Place tank on top of the bowl. Insert screws and gasket through the tank and tighten nuts underneath. Do not overtighten as this may damage the china.

CONNECTION TO WATER SUPPLY

Connect the water supply hose to the fill valve.

CONNECTION TO THE DISCHARGE PIPE WORK

These macerating units have a "step-down" elbow, simply cut off the appropriate portion of the elbow in order to fit it to the discharge pipe. Use ridged wall pipe, not flexible pipe or hose, as flexible pipe may distort over time. Use 3/4" discharge pipe.

Install a "full-port" ball or gate valve and a union in the discharge pipe in order to facilitate the removal of the macerating pump unit. Place the union or hose connector then the valve at the lower portion of the discharge pipe.

CONNECTION TO THE SOIL-STACK OR SEWER

The macerating system will pump up to 15 feet for Sanipius and Sanipro, 18 feet for Sanibest vertically, with a 1/4" per foot gravity fall (minimum) constantly throughout the horizontal run to the point of discharge. If you require a vertical lift it should precede any "horizontal" run and should commence as near as possible to the

discharge elbow. Once you have started the horizontal run, you may not change directions in a vertical manner.

If you wish the unit to pump vertically and horizontally you may calculate that 3 feet of vertical lift is equivalent to 30 feet of "horizontal" run. Each bend or change of direction gives a pressure drop, which must be deducted from the discharge performance figures in accordance with the usual head loss practice. (Rough guide: reduce discharge height by 3 feet for each 90° bend).

The discharge pipe work can be made from 3/4" diameter material. Copper (Type M), CPVC or PVC. Use long turn bends and not elbows, elbows are not normally available in plastic piping, use two 45° pieces back to back to make a 90° elbow.

The connection to the soil-stack or sewer pipe should be made with an approved wye fitting. When in doubt about this procedure please have a plumbing contractor install this for you.

SEWER PIPE (COPPER, CAST IRON, PVC, ABS)

1. Install an appropriate wye fitting into the sewer pipe, (with a 1 1/2" branch hub.)
2. Read point 4 first if using a copper wye. Glue a bushing, ((spigot x FPT) 1 1/2" x 3/4") into the 1 1/2" hub of the Y fitting.
3. Screw male adapter, ((MPT x Hub) 3/4" x 3/4" sweat) into the bushing, when discharge piping is in copper buy brass adapter, when in CPVC buy CPVC adapter.
4. When in copper; solder a length of pipe to the male adapter first, allow to cool then screw assembly into female bushing into the branch socket. When soldering pipe systems together, wind a wet rag around the plastic to keep it cool. Maintain at least a distance of 6" between the plastic and the piece soldered. Use Teflon tape or 100% Teflon dope on male thread. Any other dope product will deteriorate plastic material.
5. When using CPVC material; use CPVC glue to glue the CPVC pipe into the ABS fitting. Caution: Do not use ABS glue on CPVC materials, as the plastic will not bond.

CONNECTION TO ELECTRICAL SUPPLY

All wiring should be in accordance with the applicable electrical code in your territory. The macerating system requires a single-phase 120-volt, 15 Amp. supply. When installed in a bathroom, the receptacle should be 40 inches away (in a straight line) from a shower or bathtub. Connect only to receptacle protected by a ground fault circuit interrupter.

Warning: risk of electric shock - this pump is supplied with a grounding conductor and grounding type attachment plug to reduce the risk of electrical shock be certain that it is connected only to a properly grounded - type receptacle.

CONNECTION TO A VENT SYSTEM

The product must be vented. The macerating pump has a tapping on the lid (1 1/2-inch in diameter). All plumbing codes require that the case is vented. Start by sawing off the lid on the tapping, slide the 1 1/2-inch connector over the edge and clamp it down. Note that all fixtures connected to the system must also be vented.

Warning: Do not use an air admittance valve or a mechanical spring-loaded venting device, as these devices are one-way valves. The air pressure in and outside the macerating pump unit must be equal, a "cheater" vent will obstruct the airflow one direction.

ACTIVATING THE UNIT

1. Ensure that the toilet is free of building debris prior to activating.
2. Open the shut-off valve and let the tank fill up.
3. Ensure power supply is on.
4. Flush several times with intervals in between depositing a few sheets of toilet paper into the bowl to check discharge piping. There should be no paper remaining in the bowl after each flush.

USAGE

The toilet works as a conventional flushing toilet and needs no maintenance in normal use. However, there is nothing wrong with cleaning out the macerating pump unit once a year. Do not use bleach (Be careful not to let water enter the electrical cord opening).

The macerating system starts automatically once the toilet is flushed or the bath, shower, hand basin, etc. discharges and ceases operation once the contents have been pumped away.

CAUTIONARY NOTES:

The macerating system is not designed for the disposal of sanitary napkins, tampons, condoms, and kitchen waste, disposable diapers or paper towels. It should only be used for human waste and toilet paper. Disregarding the above might damage the macerating unit and shall void your warranty.

Do not dispose of acids, alkaloids, solvents, oils, paint, paint strippers, food waste, cotton swabs, plastic bags, kitty litter or anything that could halt or damage or corrode the unit. It is recommended to use a good brand of toilet cleaner to clean the toilet system.

Do not hang bleach blocks or hydrochlorite cleaners in the toilet tank. These solutions have been shown to deteriorate the plastic and neoprene components of the flush and fill valves, and may cause leaks. In the event of a power loss do not use the toilet or any other sanitary fixture connected to the macerating unit since it will not work until the power is restored.

PROBLEM SOLVING (See point 4)

The macerating system is very reliable. With normal use long service is assured. However, in certain cases an incident may occur which you may rectify yourself. Before taking any action check the following points:

1. Plumbing system. Flush system, water supply turned on.
2. Electrical system. G.F.C.I. breaker on. Receptacle on. Fuse okay. Breaker on. Male plug still in receptacle. Check that the thermal overload has not operated; (wait approximately 20 minutes for unit to reactivate).
3. Hydraulic system. Check that the discharge pipe and breather opening (vent pipe) are not blocked.

If the macerating pump turns on intermittently without the flush having been activated or water having been discharged, check that water out of the toilet tank is not leaking into the bowl. Or, that there is no leakage back into the macerating unit due to incorrect seating of the check valve and/or that the discharge elbow is seated properly.

SERVICING

As the unit is connected to the water and electrical supply, it is important to check that the following actions have been taken before removing the unit:

1. If possible, close off the water supply to the tank and close the ball or gate valve on the outlet pipe.
2. Pull the electrical cord out of the receptacle before removing unit.
3. Empty out as much water as possible from the toilet tank and the toilet bowl.
4. Disconnect toilet from unit. Remove toilet bowl and set aside against a wall to prevent from tipping over.
5. The use of a dry/wet type vacuum cleaner might assist you greatly in removing the residual water in the bowl or macerating unit.
6. When you have to remove the macerating unit, carefully disconnect the inlet drainpipes, (there might be residual water inside).

If you need to open the macerating unit, first release the discharge elbow, unclip the lid and pull up lid. In some cases the lid might be stuck to the case very tightly, (during assembly soapy water is used which dries up in time.) When replacing the lid grease the rubber gasket lightly with soapy water or dishwasher liquid. (Do not use Vaseline as this may expand the neoprene materials). The gasket must be inside the lid first. Start by pushing the lid down at the cord side first, then work your way around and tap on the lid with a block of wood and a hammer. The lid must be seated in the snaps.

Safety note: Beware of macerator blades, they are extremely sharp.

Whenever the unit is not to be used for long periods of time (vacation, power failure, maintenance, etc.) turn off the water supply to the tank and flush the unit to evacuate the water. No leakage into the bowl should ever be permitted from the tank.

In areas, which are prone to freezing, the total system must be properly winterized. This includes the draining of all pipes, the toilet tank and bowl and the macerating tank. The macerating system is simple to winterize. Pour a jug of plumbers' anti-freeze into the tank and flush the toilet. This will cause the macerating unit to activate and all remaining water will be replaced by plumber's anti-freeze. No parts or labour are warranted when a breakdown occurs due to freezing.

DISMANTLING AND REMOVING MOTOR FROM CASE

1. See Servicing
2. Disconnect unit from discharge pipe work (scheme 2 spare part 6) remembering that with a vertical lift there will be a head of water in the discharge pipe.
3. Disconnect all inlet pipes (5) from the sanitary fixtures connected to it, remembering to allow for drain-down of residual water.
4. Remove lid. If required to remove motor from the case, unscrew motor retaining screws. Also release the insulator cable to the lid. Lift out motor assembly. Do not attempt to dismantle the motor assembly itself as it is "clipped" together. These clips may break off when trying to unclip them. In addition to damaging the clips the motor seals may be damaged when the lid is removed from the motor housing. The motor is filled with dielectric oil, do not remove it or replace with regular oil. Please note, the distributor purposely does not keep seals, bearings, or oil in stock.

CHANGING IMPELLER

1. See Servicing and Dismantling above.
2. Invert motor to gain access to pump chamber at the base. Unclip pump cover plate from motor housing.
3. Unscrew the pump impeller counter clockwise, releasing it from the spindle. Clean pump chamber and discharge elbow and pipe work to ensure no blockage exists. Check that drive shaft rotates freely. Also check that the air relief-hole in the wall of the chamber is clear.

DRIPPING FAUCETS

Ensure that there are no faucets left open. Drops will eventually fill up the pump and the resultant repeated start-stop of the motor may heat up to such an extent, that the thermal overload switch may eventually operate and automatically stop the motor, thus possibly causing a flood.

REPLACING THE CUTTER BLADE FOR SANIPLUS / SANIPRO

The blade can be easily removed if they ever require replacement. Simply remove the retaining circlip on top of the blade/rotor assembly and lift rotor/blade assembly off the spindle. The blades can now be slid sideways, removed and replaced.

Safety note: The blades are sharp and should be handled with extreme care.

RETURN AND REPAIR OF THE MACERATING/PUMP UNIT

In the event that the unit needs to be returned for service, refer first to the trouble-shooting guide. If these solutions do not work, please call out toll free service number at 1-800-363-5874 for possible further options, or to inquire about an authorized repair shop in your area. When you are required to return the macerator unit to the manufacturer, please ensure that prior to shipping, the unit has been cleaned and disinfected inside and outside. A labour charge will be in effect for cleaning (\$50.00). Before returning any unit, a return authorization is needed from the manufacturer. Units returned without prior RGA number will be refused and returned collect.

CAUTIONARY NOTE

Do not immerse unit totally in water. Do not let water enter the electrical cord entrance opening.

If you return the macerating unit in its original packaging, please remove the discharge elbow and retain until re-assembly. If elbow is not removed, damage due to shipping might occur.

Replace lid (do not forget to lubricate the rubber gasket).

Please package the macerating unit properly with adequate shock absorbent material around it.

Send this package prepaid to the manufacturer, making sure to insure against loss and/or transit damage, (the amount of \$300.00 will suffice).

If any repairs are done outside the warranty period, or when the user has damaged the macerating unit, you will be apprised of repair costs. All repair work will be conducted on a pre-paid basis only.

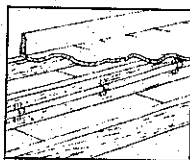


• The products are eligible to bear the CSA Mark US Shown, with adjacent indicator "C" and "US".

E ADVICE

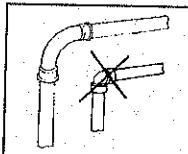
PIPE SUPPORTS

All sanitary pipe work must be supported, in accordance with the pipe manufacturer's recommendations. Avoid dipping or trapping, which may cause the build up of residual "solids" and subsequent blockage.



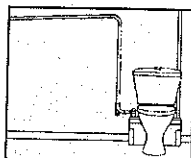
BENDS

Where possible long sweeping bends should be used. Do not use short elbows. If sweeping 90° elbows are not available use two 45° elbows to make a 90° turn.



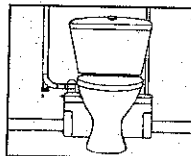
VERTICAL INSTALLATION FIRST

If vertical lift is required, this must precede the horizontal pipe run.



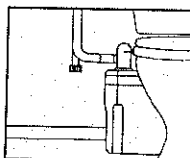
DIRECTLY VERTICAL

All vertical lifts should rise as directly above the unit as possible, allowing only for the need to clear the toilet tank. Any initial horizontal pipe run from the unit, prior to a vertical lift should not exceed 12".



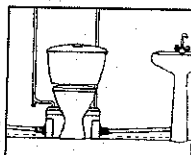
EASY ACCESS

The unit should be accessible and removable in the event of maintenance being required. During the installation a full-port ball valve should be installed at the base of any vertical discharge pipe work from the unit to allow easy service of the unit.



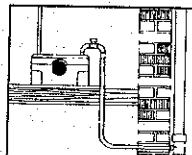
GRAVITY FALL

The unit accepts wastewater by gravity; it does not "vacuum" in water. All inlet pipe work must have a positive gravity fall, (1/4" per foot). All horizontal piping from the macerating unit must also have a positive gravity fall to allow free drainage when the pump stops.



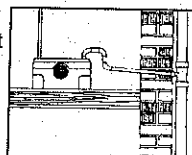
NO DIRECT FALL

Where the point of discharge into the soil stack is significantly lower than the base of the unit, a vacuum relief valve may need to be fitted at the highest point in the pipe run in order to avoid siphonage of the water seal.



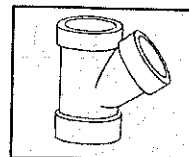
THREE FEET MINIMUM

The macerating unit must be installed at least 3 feet from the soil stack. This will allow the macerator to operate for an adequate period of time to ensure efficient waste reduction.



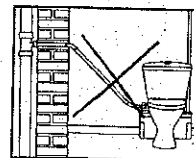
SOIL STACK CONNECTION

All discharge pipe work must be connected to the soil stack by an appropriate and approved connection. A "tee" or "y" fitting as shown is preferable.



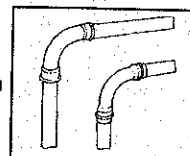
NO DIAGONAL "UPHILL" PIPE RUNS

All discharge pipe work from the unit should run either directly vertical upwards from it or in a horizontal plane (with a small gravity flow) to the point of discharge. Pipe work should not be installed with diagonal upward slope from the unit to the point of discharge.



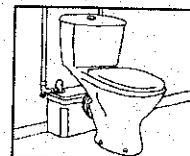
PIPE WORK

All pipe work should be either copper, PVC or CPVC. (Do not use flexible pipes). Hangers should not be less than four feet apart to prevent pipe rattling.



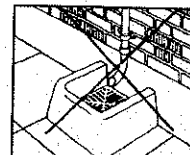
FLUSHING

Macerating systems requires a minimum of 6 liters of water to operate satisfactorily.



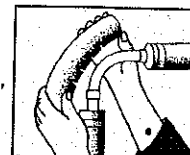
DISCHARGE

Never discharge directly into an open drain, fixture, manhole or rainwater drainpipe. It is illegal for it constitutes a health hazard. Direct connections into sanitary waste systems only, shall be acceptable.



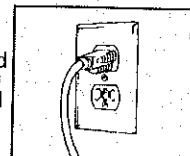
FREEZING

Ensure all pipe work susceptible to freezing is adequately insulated or heated. In unheated buildings, the toilet, piping and macerating unit must be properly winterized with "recreation vehicle" anti-freeze or drained completely.



ELECTRICITY

Before attempting any maintenance or servicing, the unit must be disconnected from the power source. The macerating system must be connected to a Ground Fault Circuit Interrupter.



TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	REMEDY
Motor turns normally but the water evacuates slowly from the bowl, (flush incomplete).	Discharge pipe blocked or valve not vented properly.	Take lid off and clean out the piping and air breather hole.
Waste build up in bowl.	Inadequate water supply from reservoir.	Check and/or adjust water level in reservoir.
The macerating/pump unit does not start up. Water does not evacuate.	Power supply off. Thermal overload cut out.	Wait for thermal overload to engage (approx. 20 min).
The motor hums but does not turn the water does not evacuate.	Foreign body blocking the macerating blades or pump. Defective capacitor.	See "dismantling".
Water goes down slowly and motor works intermittently.	Clogged up (sanitary napkin, newspaper, etc.).	Flush 3 or 4 times to clear. Cleaning or dismantling may be required. Clean out the breather hole.
The water evacuates from the toilet but the motor runs for a very long time, thermal overload activates.	Kinked/blocked discharge pipe, damaged membrane, defective impeller, and partially blocked pump.	Check installation, and/or inside the macerating/pump unit.
After evacuation the motor engages several times in succession before it stops completely.	Water siphons back into the macerating/pump unit. Check valve is not functioning properly.	Flush once or twice with clean water to clear valve or remove valve to clean.
Motor turns noisily without stopping or pumping.	Siphonage or insufficient back pressure in discharge pipe, causing air-lock. Foreign object.	Modify discharge pipe run to eliminate siphonage and/or increase backpressure. E.g. reduce pipe size, put extra bend in run. Remove foreign object.
After evacuation the motor starts, stops, and re-engages indefinitely.	Water leaking from reservoir into bowl. Faulty non-return check valve.	Check flush valve. Check and clean non-return check valve.
For Saniplus / Sanipro, the motor turns with a rattling noise.	Solid item has fallen into the grille of the macerating/pump unit.	Clear object from grille area.
Water backs up into shower tray or bathtub.	Inadequate gravity-fall into macerating unit or blockage in drain piping. Faulty inlet control flap.	1/4" per foot gravity fall minimum into macerating/pump unit from other sanitary fixtures. Clean out the flap.

When claiming a warranty repair we will need the information you have written down below. Please ensure that you have all particulars available when requesting warranty work.

Name Owner: _____

Installation Address: _____

Purchased From: _____

Installed By: _____

Date of Purchase: _____

Serial Number: _____

Date of Manufacture: _____ (see manufacturers' tag on unit)

LIMITED WARRANTY

Warranty period two-year from date of purchase

Subject to the conditions listed below, **SFA-SANIFLO INC.** (hereinafter called the "Company") guarantees to repair or at its option replace the product or any component thereof which, in the opinion of the Company, is faulty or below standard as a result of inferior workmanship or materials.

The conditions of this guarantee are:

- The Customer must within 7 days of purchase complete the accompanying forms and send them to the Company for registration. Failure to return may result in denial of warranty claim by the Company.
- The product must have been connected to a single phase 120-volt, 60Hz, electrical supply and not have been subjected to misuse, neglect, accident or damaging products.
- The product must not have been installed, modified, adjusted or repaired other than by an installer recognized as qualified by the company.
- The alleged fault or defect must be notified to the Company, within the warranty period.
- The product is warranted for a two-year period from the date of purchase.
- The product will be exchanged free of charge, at the original re-sellers place of business only, upon the following conditions being fulfilled:
- The customer will need a "Return Authorization" number from the manufacturer to validate the exchange.
- The customer must supply the "bill-of-purchase" to validate the exchange.
- Fill and Flush mechanism as per OEM manufacturers' warranty only.
- Except for factory defects, no warranty on the vitreous china parts.
- This guarantee does not extend to the cost of disconnection and reconnection of the product (ie. labour).
- In no event shall the company be liable for any special, incidental or consequential damage, loss, or injury of whatsoever nature or kind arising from or in connection with the product or any component thereof.
- This guarantee is transferable only when the unit remains at the same premises as where it was installed initially.
- This guarantee does not extend to the installation of the SaniRange, as the quality of workmanship is beyond our control.
- This guarantee does not extend to the cost of mail or freight when a part or parts of the system has to be repaired at the factory.

Except as set forth in this Limited Warranty, the company disclaims all other warranties, express or implied, with respect to the product or any component thereof including, but not limited to, all implied warranties for merchantability and fitness for a particular purpose.

***All labour charges, such as a plumber disconnecting and or reconnecting, are the end-users responsibility.**

For Service and other inquiries, please call either of the addresses listed below.

United States
SFA-SANIFLO INC.
P.O. Box 6628
Edison, NJ
08818-6628

Canada
SFA-SANIFLO INC.
1-685 Speedvale Avenue West
Guelph ON
N1K 1E6

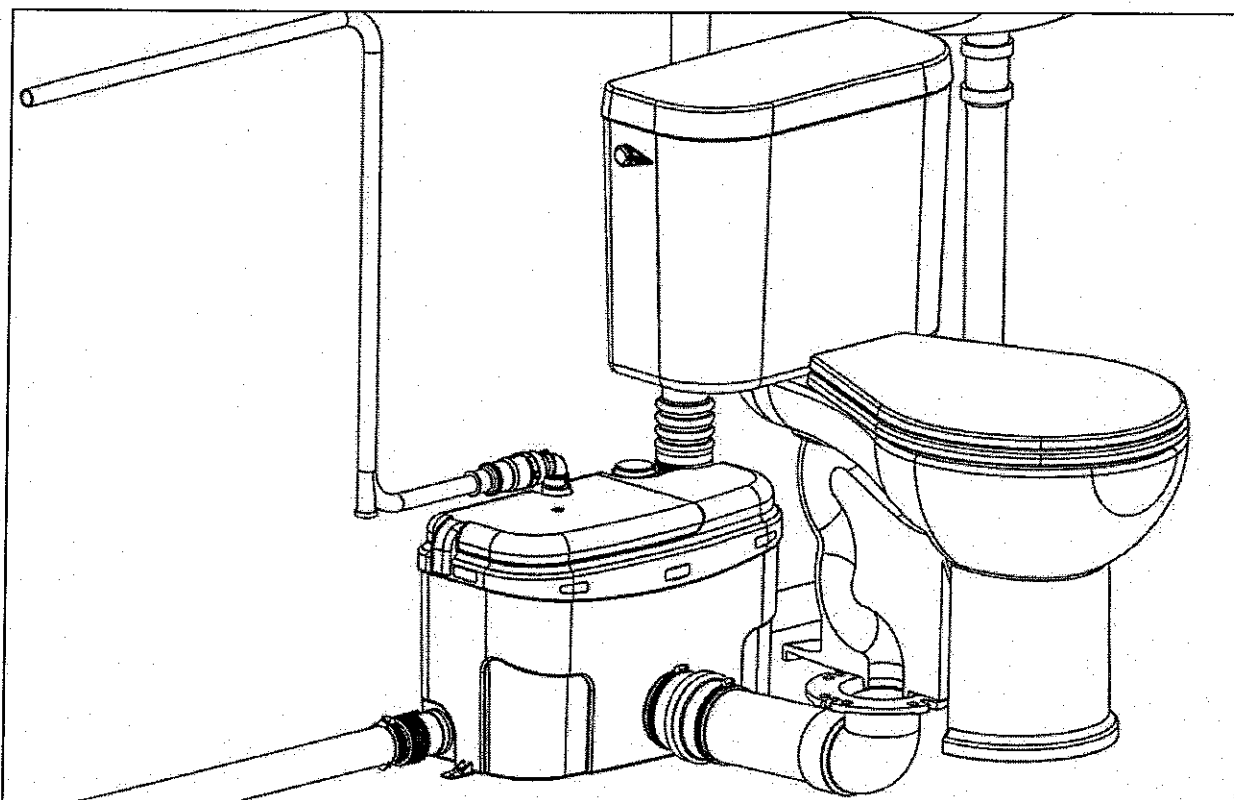
Customer toll free: 800-363-5874

Telephone: 519-824-1134
Telefax: 519-824-1143
Email: sfasales@saniflo.com
Web Site: www.saniflo.com

Customer toll free: 800-363-5874 English
Customer toll free: 800-877-8538 French
Telephone: 519-824-1134
Telefax: 519-824-1143
Email: sfasales@saniflo.com
Web Site: www.saniflo.com

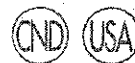
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SFA



Read carefully before installing Sanigrind; retain this Instruction Book for future reference.
Avant d'installer Sanigrind, lisez attentivement cette brochure et conservez-la en cas de besoin.

This product must be installed in strict accordance with local plumbing codes.
Product should be installed by a licensed plumber.
Le produit doit être installé dans le respect des règlements sanitaires locaux.
Le produit doit être installé par un plombier qualifié.



INSTALLATION AND MAINTENANCE INSTRUCTIONS INSTRUCTIONS D'INSTALLATION ET D'ENTRETIEN

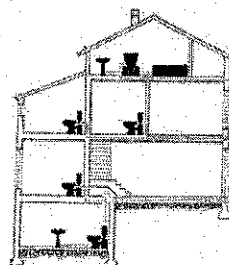
Install a Toilet or Bathroom anywhere you like.
Installez une toilette ou une salle de bains partout où vous le désirez.

SANIGRIND®

SANITARY FOR ALL LTD

Pump the Impossible

SANIGRIND®



Install a toilet or bathroom anywhere you like

Dear Customer,

Thank you for purchasing a Sanigrind macerating toilet system. We are sure that it will provide you with the luxury of additional bathroom facilities that would otherwise be impractical or too expensive to consider.

Our units have been marketed for many decades throughout Europe and North America and we provide a limited two year warranty on parts and labour of the macerating pump unit. Before commencing with the installation please read carefully the installation instructions.

Enclosed with the product you will find a warranty registration card and a Questionnaire. Please fill out both and return them to us within seven workdays.

Please note that this information is for your own use and will not be sold or otherwise made public.

In the event of a warranty claim, non-registered claimants will have to provide a proof of purchase to verify their warranty claim, thus delaying possibly repairs.

We kindly ask you to fill out the questionnaire; this will greatly assist us in further improving our customer service. Upon receipt of the warranty registration card and questionnaire we will mail you a small gift for your help.

Thank you for your confidence in our products. We are sure they will give you complete satisfaction.

Yours faithfully,

SFA Saniflo Inc.

P.S. In the unfortunate event that a repair is necessary, please contact us first and then contact your installer. There are often cases of delay due to the late forwarding of the customer's complaint.

Madame, Monsieur,

Nous vous remercions d'avoir acheté un cabinet à système de broyage Sanigrind. Nous sommes persuadés qu'il vous donnera le luxe d'un cabinet supplémentaire qu'il serait difficile ou trop coûteux d'acquérir autrement.

Nos cabinets se vendent partout en Europe et en Amérique du Nord, depuis plusieurs décennies, et nous vous offrons une garantie limitée de 2 ans sur les pièces et la main-d'œuvre pour l'ensemble broyeur-pompe. Avant d'installer votre nouveau cabinet, veuillez lire attentivement les instructions d'installation.

Une carte d'enregistrement de la garantie, ainsi qu'un questionnaire, accompagnent le produit. Nous vous prions de les remplir et de nous les retourner dans un délai de sept jours ouvrables. Veuillez prendre note que ces renseignements sont strictement confidentiels et qu'ils ne seront pas vendus ni publiés.

Nous attirons votre attention sur le fait qu'en cas de réclamation aux termes de la garantie, les clients dont la garantie n'a pas été enregistrée doivent fournir une preuve d'achat à l'appui de leur réclamation, ce qui retarde les travaux de réparation.

Nous vous prions de bien vouloir remplir le questionnaire, car cela nous aidera à améliorer davantage notre service à la clientèle. Dès réception de la carte d'enregistrement de la garantie et du questionnaire dûment remplis, nous vous enverrons un petit cadeau par la poste pour vous remercier de votre collaboration.

Nous vous remercions pour la confiance que vous nous avez témoignée en achetant un de nos produits et nous n'avons aucun doute qu'il vous donnera entière satisfaction.

Cordialement,

SFA Saniflo Inc.

P.S. Si malheureusement vous aviez à faire réparer l'appareil, veuillez communiquer avec nous d'abord, et avec votre installateur par la suite. Des retards sont souvent occasionnés à cause du fait que la plainte du client ne nous est pas acheminée à temps.

Introduction

The macerating system can simultaneously receive wastewater from several sanitary fixtures, e.g. bidet, hand basin, shower, bathtub, urinal, but only from one toilet per unit.

Macerating systems are designed for the disposal of human waste, toilet paper, as well as for kitchen, dishwasher or washing machine water.

Sanitary fixtures connected to the macerating system must be located on the same level.

General description

The macerating system is a residential grinder and pumping system for toilet and bathroom fixtures. The macerator pump unit connects to a vertical outlet toilet. The system is comprised of three major components: the macerator unit, the toilet bowl and the toilet tank.

The macerator unit also consists of three major parts: the case which houses the operating mechanism; a pressure chamber which automatically activates and deactivates; the induction motor which drives the grinding blade and the impeller pump (below the motor).

Vent connector (n°1 figure 1)

Air venting by connection to a vent system.

Sanitary inlets

The macerating pump unit is equipped with two 1 1/2" inlets, one on either side of the case. These inlets are used to connect other sanitary fixtures. When installing a bathtub, take into account the necessary slope for drainage by gravity. Since the Sanigrind is generally installed below ground level, gravity-flow should not be a problem.

However, if necessary, you can build a 2 x 8-inch platform, on which the tub can be placed. This gives enough space for a p-trap. Similarly, a special raised shower base can be purchased. Contact SFA Canada for details.

Normal operating cycle

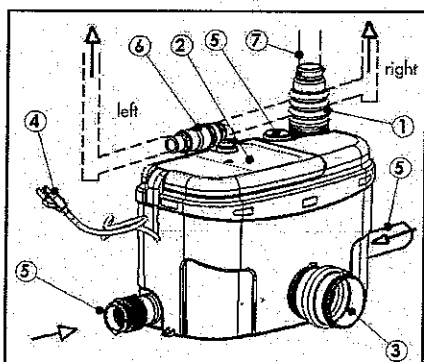
As the toilet is operated or as the bath, shower or hand basin discharges, the water and waste enter the unit. The water level begins to rise, engaging the pressure switch in the pressure chamber. This in turn activates the motor and pump. The shredder blades rotate at 3600 RPM, shredding waste. The shredded waste is picked up by the impeller pump and discharged through a 3/4" outlet pipe to a sanitary sewer or soil stack.

Safety note: For safety reasons the macerating unit should never be activated with the lid removed

Preparing the macerating pump unit (see figure 1 and pages 8, 9)

Push the discharge elbow-flapper in the desired direction for drainage.

At this point you can connect the pipework from the other sanitary fixtures to the macerating system, (see « Connection to discharge pipework & soil stack »).



1. Vent connection
2. Removable lid
3. Accordion toilet connector
4. Power supply cable with ground wire
5. RH/LH gravity fed inlets, 1 1/2"
6. Discharge elbow with check valve
7. Vent pipe, 1 1/2"

FIGURE 1

System assembly

(See connection to discharge pipework)

1. Place the macerator at the desired location and connect the pipe work to it (See Connection to Discharge Pipe Work).
2. Rough-in the proprietary flange/elbow as per toilet requirements. I.e. 10' or 12' from the finished wall. Glue a 3" drain pipe into the elbow and insert the other side into the macerator connector.
Note: The Flange/Elbow is made of ABS material, you will be able to use PVC pipe if using an ABS/PVC transition cement.
3. Insert toilet bowl screws into the flange, place wax ring onto the flange and place the bowl on the flange. Slip the china protectors over the toilet bowl screws and tighten. Snap plastic cover caps in place.
4. Install tank as per toilet installation instructions.

Connection to water supply

Connect the water supply hose to the fill valve.

Connection to the discharge pipework

Use ridged wall pipe, copper, PVC or CPVC not flexible pipe or hose.

Option: You can install a "full-port" gate valve and a drain at the lower portion of the discharge pipe, in order to facilitate the removal of the macerating pump unit.

Connection to the soil-stack or sewer

The macerating system will pump up to 18 feet vertically, or up to a maximum of 150 feet horizontally, with a constant 1/4" to 1' gravity fall (minimum) throughout the run to the point of discharge. If you require a vertical lift it should precede any "horizontal" run and should commence as near as possible to the discharge elbow. (Page 15)

The above given vertical and horizontal distances are both maximums: to combine them, please consult the « Performance Chart ».

If you wish the unit to pump vertically and horizontally you can assume that 3 feet of vertical lift is equivalent to 30 feet of "horizontal" run. Each bend or change of direction gives a pressure drop, which must be deducted from the discharge performance figures in accordance with the usual head loss practice. (reduce height by about 1 foot for every bend).

The discharge pipe work can be made of 3/4" copper, CPVC or PVC. The open end of the flapper accepts any of these three materials and the gear clamp secures the assembly. Use two 45° pieces back to back to make a 90° elbow.

The connection to the soil-stack or sewer pipe should be made with an approved Y fitting. When in doubt about this procedure, have a plumbing contractor install this for you.

Sewer pipe (copper, cast iron, PVC, ABS)

1. Install an appropriate Y fitting into the sewer pipe, (with a 1 1/2" branch hub).
2. Read point 4 first. Glue a bushing, (spigot x FPT 1 1/2" x 3/4") into the 1 1/2" hub of the Y fitting.
3. Screw male adapter, (MPT x Hub 3/4" sweat) into the sleeve. If discharge piping is copper, buy brass adapter; if CPVC buy CPVC adapter.
4. If piping is copper, solder a length of pipe to the male adapter first, allow to cool then screw assembly into female bushing. When soldering pipe systems together, wind a wet rag around the plastic bushing to keep it cool. Maintain at least a distance of 6" between the plastic and the piece soldered. Use Teflon tape on male thread.
5. When using CPVC material, use CPVC glue to glue the CPVC pipe into the ABS fitting. Do not use ABS glue on CPVC pipes

Connection to electrical supply

All wiring should comply with the applicable electrical code in your area. The macerating system requires a single-phase 120-volt, 15 Amp. supply. When installed in a bathroom, the receptacle should be 40 inches away from a shower or bathtub. Connect only to receptacle protected by a ground fault circuit interrupter. (GFCI)

Warning: electrical hazard – this unit is equipped with a grounded plug – in order to reduce the risk of electrical shock, ensure that the unit is plugged to a grounded electric circuit.

Connection to a vent system

The macerating pump system has been designed to enable you to connect it to a vent system as required by local codes. On the right side of the lid, there is an opening for the vent. Slip the supplied accordion connector over the lip and finish of the 1 1/2" PVC or ABS vent pipe.

Warning: Do not use an air admittance valve (cheater, mechanical vents), which are one-way valves. The air pressure in and outside the macerating pump unit must remain constant.

Activating the unit

1. Prior to activating, ensure that the toilet is free of any material from the installation.
2. Open the shut-off valve and let the tank fill up.
3. Ensure power supply is on.
4. Flush several times, allowing some time in between each flush, and depositing a few sheets of toilet paper into the bowl to check discharge piping. There should be no paper remaining in the bowl after each flush.

Usage

The toilet works as a conventional flushing toilet and needs no maintenance in normal use. However, there is nothing wrong with cleaning out the macerating pump unit once a year. (Be careful not to let water enter the electrical chamber).

The macerating system starts automatically once the toilet is flushed or the bath, shower, hand basin, etc. discharges and ceases operation once the contents have been pumped away.

Cautionary notes:

The macerating system is not designed for the disposal of sanitary napkins, tampons, condoms, disposable diapers or paper towels, in the regular manner. It should only be used for human waste, toilet paper, bathroom and kitchen water. Disregarding the above might damage the macerating unit and shall void your warranty.

Do not dispose of acids, solvents, oils, paint, paint strippers, food waste, cotton swabs, plastic bags, or anything that could clog, damage or corrode the unit.

Do not hang bleach blocks or hydrochloride cleaners in the toilet tank. These solutions deteriorate the plastic and neoprene components of the flush, fill valves and macerating system components, which may cause leaks. In the event of a power loss do not use the toilet or any other sanitary fixtures connected to the macerating unit since they will not work until the power is restored.

Whenever the unit is not to be used for long periods of time (vacation, power failure, maintenance, etc.) turn off the water supply to the tank and flush the unit to evacuate the water. No leakage into the bowl should ever be permitted from the tank.

In areas which are prone to freezing, the total system must be properly winterized. This includes the draining of all pipes, the toilet tank and bowl and the macerating tank. To winterize the macerating system, pour a jug of plumbers' anti-freeze into the tank and flush the toilet. This will cause the macerating unit to activate and all remaining water will be replaced by plumber's anti-freeze. No parts or labour are covered by the warranty when a breakdown occurs due to freezing.

Problem solving (consumer) (see also page 10)

The macerating system is very reliable. With normal use, long service is assured. However, in certain cases an incident may occur which you may rectify yourself. Before taking any action check the following points:

1. Plumbing system. Correctness of flush system, water supply turned on.
2. Electrical system. GFCI breaker on. Receptacle on. Fuse okay. Breaker on. Male plug still in receptacle. Check that the thermal overload has not been activated; (wait approximately 20 minutes for unit to reactivate).
3. Ensure that no faucet is leaking.
4. If the macerating pump turns on intermittently without the flush having been activated or water having been discharged, check that water out of the toilet tank is not leaking into the bowl.
5. It is normal for the motor to turn once or twice after completing the discharge cycle when the macerating system has not been in use for some time. This cleans the check valve and ensures a good fit.

INSTRUCTIONS FOR QUALIFIED PROFESSIONALS ONLY (see page 10)

- 1- Verify: that there is no leakage flowing back into the macerating unit due to incorrect seating of the internal check valve and/or improper installation of the discharge elbow. If the macerating unit is equipped with an external check valve, ensure that the flapper seat is clean and is greased lightly with silicone grease.
- 2- As the unit is connected to the water and electrical supply, it is important to check that the following actions have been taken before opening the unit:
 1. If possible, close off the tank's water supply, flush the tank and close the optional ball or gate valve on the outlet pipe.
 2. Unplug the unit.
 3. Empty out as much water from the bowl as possible.
- 3- Access the lid and unscrew it.
You can then access the pressure switch, the condenser, which can be easily replaced, if necessary.

4-Dismantling and removing the motor

1. If you must access the macerating unit, remove the hood screw (3) (Figure 2), followed by the 12 screws from the motor mount (35) (Figure 3) and, with the handle, extricate the motor-pump assembly, and remove the pipe ring from the turbo-jet.

Do not attempt to dismantle the motor assembly itself as its components are "clipped" together. These clips may break off when trying to unclip them. In addition to damaging the clips, the motor seals may be damaged when the lid is removed from the motor case. The motor is filled with dielectric oil, do not remove it or replace with regular oil. Please note that the distributor does not keep seals, rings, or oil in stock.

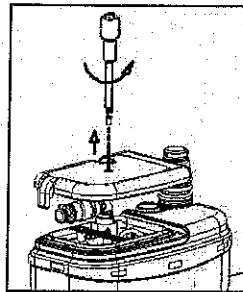


FIGURE 2

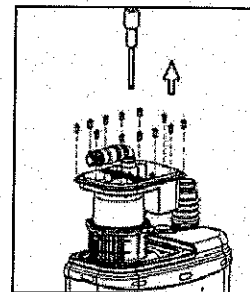
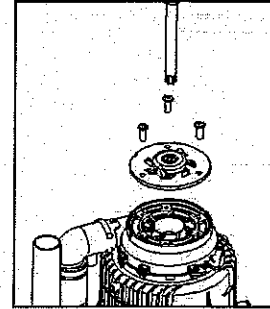


FIGURE 3

Cleaning or changing the grinder blade and the impeller

1. Turn the motor upside down to gain access to the pump body.
2. Unscrew the 3 screws of the grinder blade (fig. 4).
3. Clean or change the grinder blade.
4. Unscrew the pump impeller counter clockwise, releasing it from the spindle.
Clean pump body, discharge elbow and pipework to ensure no blockage exists.
Check that drive shaft rotates freely. Also check that the air relief-hole in the wall of the pump body is clear.
5. Reconnect the grinder blade.
Before reconnecting the grinder blade, ensure that the cross disc 50 is at the far end of the pump. When inserting the motor into the tank, ensure that the elbow end is fully inserted into the tank.

Tip: In order to facilitate the reconnecting of the motor support onto the tank, apply some liquid soap on the rubber joint. Reassemble the unit completely before plugging it back in.

**FIGURE 4****Cautionary note**

Handle the grinder blade with extreme care; it is extremely sharp. Do not immerse the macerating system in water. Do not let water enter through the electrical cord opening.

Return and repair of the macerating/pump unit

In the event that the unit needs to be returned for service, refer first to the trouble-shooting guide. If these solutions do not work, please call our toll free service number at 1-800-363-5874 for possible further options, or to inquire about an authorized repair shop in your area. When you are required to return the macerating unit to the manufacturer, please ensure that prior to shipping, the unit has been cleaned and disinfected inside and outside. A labour charge of fifty dollars (\$50) will be in effect for cleaning. A prior approval (RGA #) must be obtained from the manufacturer before the unit can be returned.

If you return the macerating unit in its original packaging, please remove the flapper-elbow and the vent connection. If components are not removed, damage may occur during shipping.

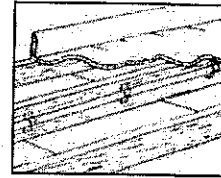
Please package the macerating unit properly with adequate shock absorbent material around it.

Send this package prepaid to the manufacturer, making sure to insure against loss and/or transit damage, (the amount of \$300.00 should suffice).

If any repairs are done outside the warranty period, or when the user has damaged the macerating unit, you will receive a repair costs estimate. All repair work will be conducted on a pre-paid basis only.

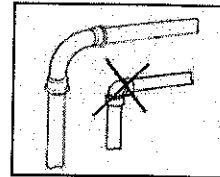
Pipe Supports

All sanitary pipework must be supported, in accordance with the pipe manufacturer's recommendations to avoid dipping or trapping, which may cause the build up of residual « solids » and subsequent blockage.



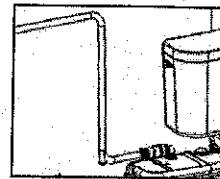
Bends

Where possible pattern bends should be used instead of elbows. If long sweeping 90° elbows are not available, use two 45° elbows to make a 90° turn.



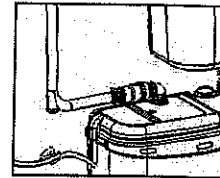
Vertical Installation First

If vertical lift is required, this must precede the horizontal pipe run.



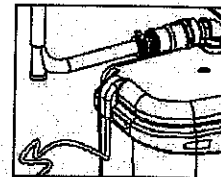
Directly Vertical

All vertical lifts should rise as directly above the unit as possible, allowing only for the need to clear the toilet tank. Any initial horizontal pipe run from the unit, placed prior to a vertical lift, should not exceed 18".



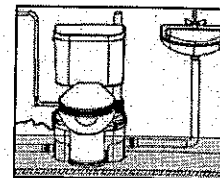
Easy Access

The unit should be accessible and removable in the event of maintenance being required. During the installation a full-port gate or ball valve should be installed at the base of any vertical discharge pipe to allow easy service of the unit.



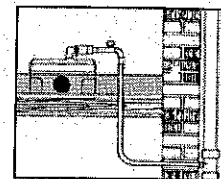
Gravity Fall

The unit accepts wastewater by gravity; it does not pump in water. All pipework must have a positive gravity fall, (1/4" per foot). All horizontal discharge piping from the macerating unit must also have a positive gravity fall to allow free drainage when the pump stops.



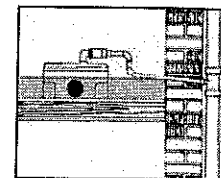
No Direct Fall

Where the point of discharge into the soil stack is significantly lower than the base of the unit, a vacuum relief valve may need to be fitted at the highest point in the pipe run in order to avoid siphonage of the water seal.



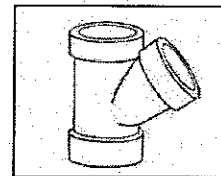
Three Feet Minimum

The macerating unit must be installed at least 3 feet from the soil stack. This will allow the macerator to operate for an adequate period of time to ensure efficient waste reduction.



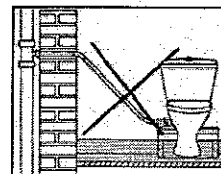
Soil Stack Connection

All discharge pipework must be connected to the soil stack by an appropriate and approved connection. Y pattern fitting as shown is preferable.



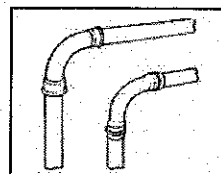
No Diagonal "Uphill" Pipe runs

All discharge pipework from the unit should either run directly upwards from it or in a horizontal plane (with a small gravity flow) to the point of discharge. Pipework should not be installed with diagonal upward slope from the unit to the point of discharge.



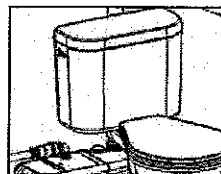
Pipework

All pipework should be either copper or solvent weld plastic. Do not use flexible pipes. Hangers should not be less than four feet apart to prevent pipe rattling.



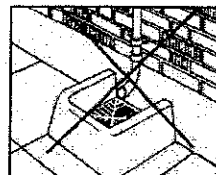
Flushing

The macerating system requires a minimum of 6 litres of water to operate satisfactorily.



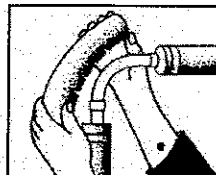
Discharge

Never discharge directly into an open sewer, manhole or rainwater drainpipe. It is illegal as it constitutes a health hazard. Only direct connections into sanitary waste systems are acceptable.



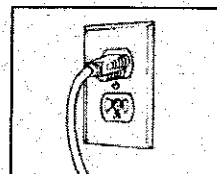
Freezing

Ensure all pipework susceptible to freezing is adequately insulated or heated. In unheated buildings, the toilet, piping and macerating unit must be properly winterized with « recreation vehicle » anti-freeze or drained completely.



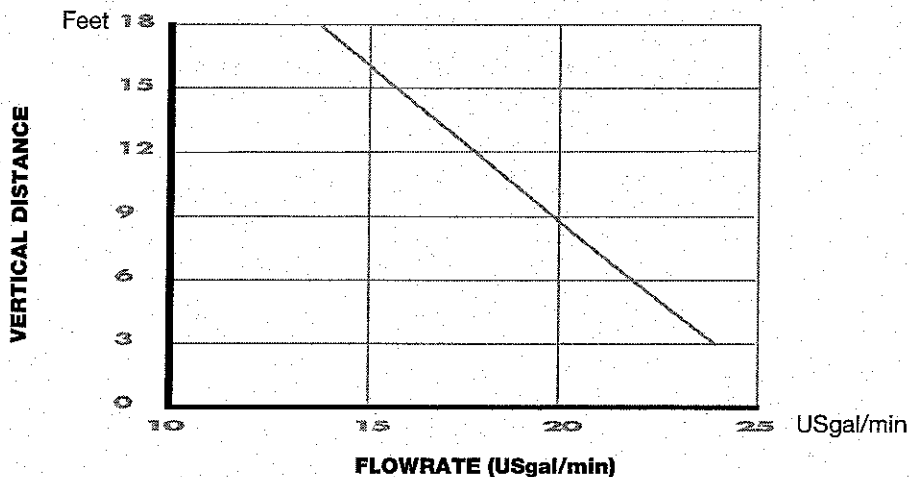
Electricity

Before attempting any maintenance or servicing, the unit must be disconnected from the power source. The macerating system must be connected to a Ground Fault Circuit Interrupter.



Instructions for qualified professionals only

PROBLEM	CAUSE	REMEDY
Motor turns normally but the water drains slowly from the bowl (incomplete flush).	The discharge tube blocked, fresh-air inlet hole or knife is blocked.	Remove hood and motor mount, clean the tube, the knife and the air inlet.
Waste builds up in the bowl.	Inadequate water supply from tank.	Check and/or increase water level in tank.
The macerating/pump unit does not start up. Water does not drain.	Power supply off. Thermal overload doesn't work. Electronic card is defective.	Wait for thermal overload to engage (approx. 20 min). Change electronic card.
The motor hums but does not turn. The water does not drain.	A foreign object blocks the blade or pump. Defective condenser.	Clean knife and change condenser.
Water goes down slowly and motor works intermittently.	Air inlet is plugged or insufficient VMC connection	Dismantle to clean.
The water drains from the toilet but the motor runs more than 20 seconds and the thermal overload is activated.	Kinked/blocked discharge pipe, defective impeller, partially blocked pump, blocked knife.	Check installation and examine inside the macerating/pump unit.
After drainage the motor engages several times in succession before it stops completely.	Water siphons back into the macerating/pump unit. Non-return valve is not functioning properly.	Flush once or twice with clean water to clear valve or remove valve to clean.
Motor turns noisily without stopping or pumping.	Siphonage or insufficient back pressure in discharge pipe, causing airlock. Foreign object.	Modify discharge pipe run to eliminate siphonage or increase back pressure (e.g. reduce pipe size, put extra bend in run). Remove foreign object.
After water is drained the motor starts, stops, and constantly re-engages.	Water leaking from tank into bowl. Faulty non-return valve.	Check flush valve. Check and clean non-return valve.
The motor turns with a rattling noise.	Solid item has fallen into the Sanigrind and is hitting the knife.	Clear blocked object (see dismantling)
Water backs up into shower or bathtub.	Inadequate gravity-fall into macerating unit.	1/4" to 12" minimum gravity fall between macerating/pump unit and other sanitary fixtures.



DISTANCE VERTICAL OF 18 FEET, DISTANCE HORIZONTAL OF 150 FEET
(or a lower combination of both)

FLOW 90L/min (24 Gallons/min)

Performance

If you wish the unit to pump vertically and horizontally, you may calculate that three feet of vertical lift is equivalent to 30 feet of horizontal run. Or increase pipe size in the horizontal pipework. For every bend, deduct 3 feet of horizontal distance.

For long distances, the vertical riser should be followed by a horizontal pipe whose diameter should be at least 1 1/2" for drainage by gravity.

When claiming a warranty repair we will need the information you will have written down below. Please ensure that you have all particulars available when requesting warranty work.

Owner's Name: _____

Installation Address: _____

Purchased From: _____

Installed By: _____

Date of Purchase: _____ Serial Number: _____

Date of Manufacture: _____ (see manufacturers' tag on side of unit)

Limited Warranty

Two year Warranty from date of purchase

Subject to the conditions listed below, **SFA SANIFLO INC.** (hereinafter the "Company") guarantees to repair or at its option replace the product or any component thereof which, in the opinion of the Company, is faulty or below standard as a result of poor workmanship or materials.

The conditions of this guarantee are:

- The Customer must within 7 business days of purchase complete the accompanying warranty card and send it to the Company for registration. Failure to do so may result in denial of warranty claim at the option of the Company.
- The product must have been connected to a single phase 120-volt, 60Hz, electrical supply and not have been subjected to misuse, neglect, accident or exposure to damaging products.
- The product must not have been installed, modified, adjusted or repaired other than by an installer deemed qualified by the company.
- The installer must be notified of the alleged fault or defect or, failing him, the Company, within the warranty period.
- The product is warranted for a two-year period from the date of purchase.
- The product will be exchanged free of charge, at the original re-sellers place of business only, upon the following conditions being fulfilled:
- The customer will need a "Return Authorization (RGA) " number from the manufacturer to validate the exchange.
- The customer must supply the "bill-of-purchase" to validate the exchange.
- Fill and Flush mechanism as per OEM warranty only.
- No warranty on the vitreous china parts.
- This guarantee does not extend to the cost of disconnection and reconnection of the product.
- In no event shall the company be liable for any special, incidental or consequential damage, loss, or injury of whatsoever nature or kind arising from or in connection with the product or any component thereof.
- This guarantee is transferable only when the unit remains at the same premises as where it was installed initially.
- This guarantee does not extend to the installation of SaniRange products, as the quality of workmanship is beyond our control.
- This guarantee does not extend to the shipping or transport costs when a part or parts of the system has/have to be repaired at the factory.

Except as set forth in this Limited Warranty, the company disclaims all other warranties, express or implied, with respect to the product or any component thereof including, but not limited to, all implied warranties for merchantability and fitness of this product for a particular purpose.

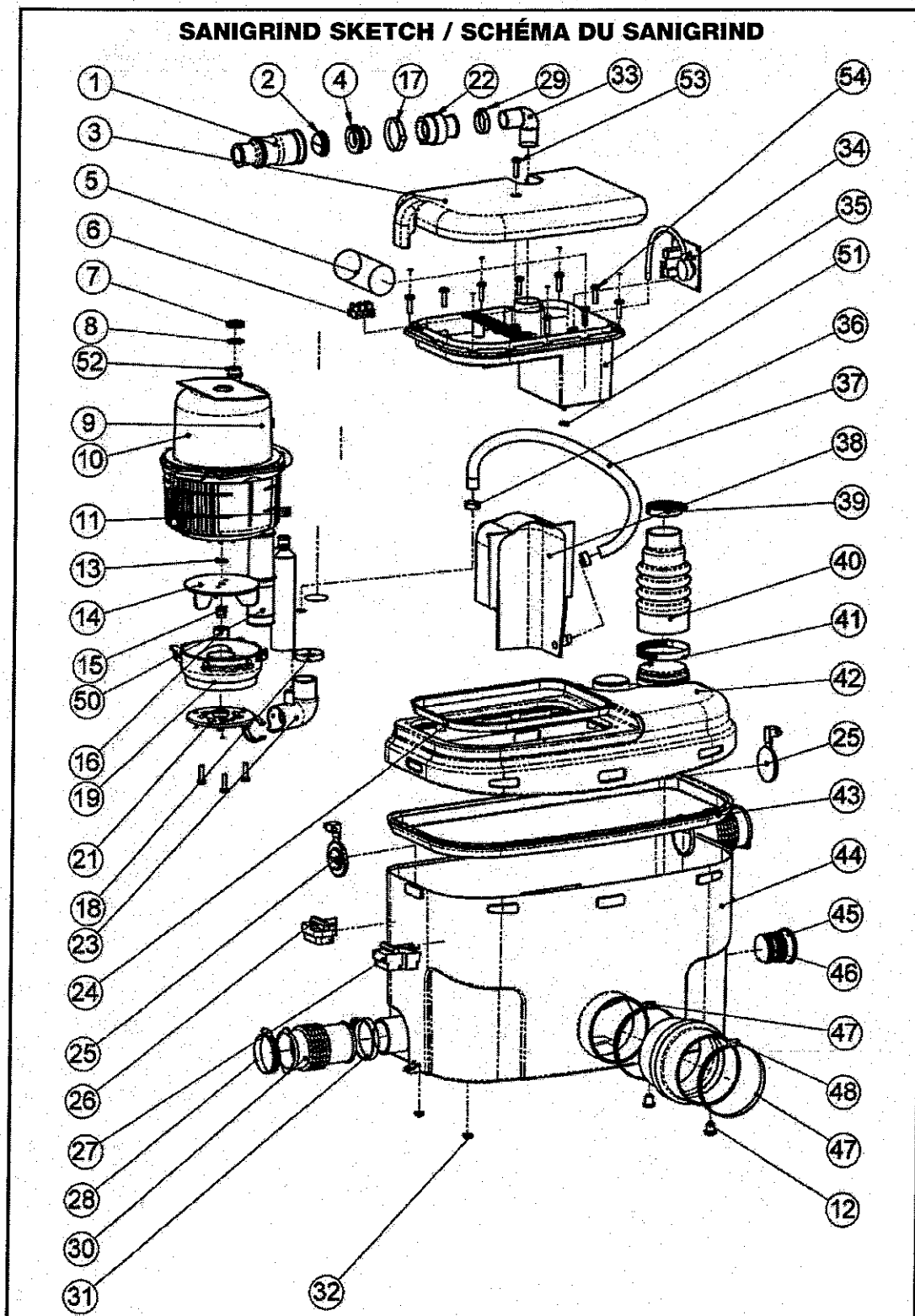
All labour charges, such as a plumber disconnecting or reconnecting the unit, are the end-user's responsibility.

CANADA

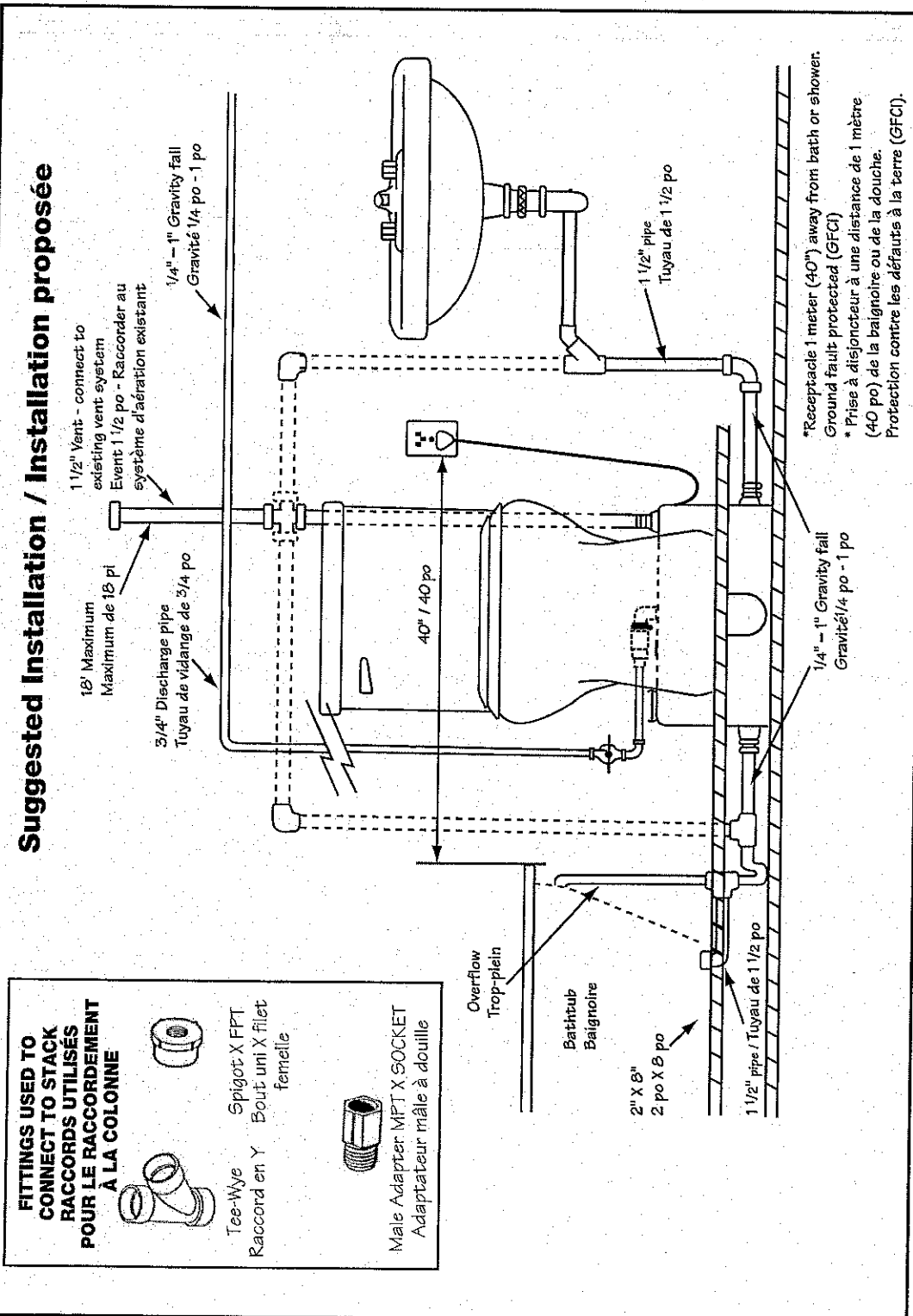
SFA SANIFLO INC.
1-685 Speedvale Ave. West
Guelph, Ontario N1K 1E6
Toll Free: (800) 877 - 8538 French
Toll Free: (800) 363 - 5874 English
Telephone : (519) 824 - 1134
Telefax : (519) 824 - 1143
Email : sfasales@saniflo.com
Website : www.saniflo.com

UNITED STATES

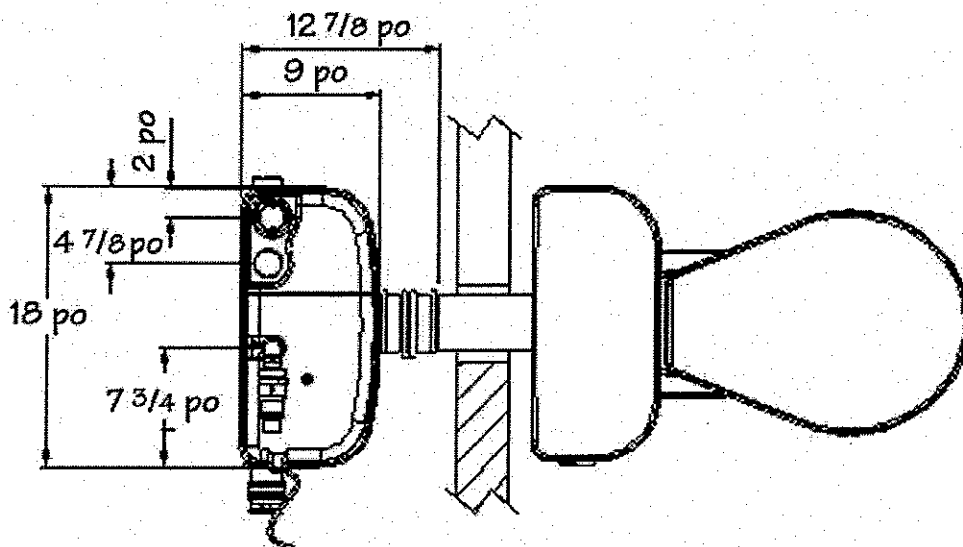
SFA SANIFLO INC.
105 Newfield Avenue, Suite A
Edison, NJ 08837
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Telephone : 732-225-6070
Telefax : 732-225-6072
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Website : www.saniflo.com



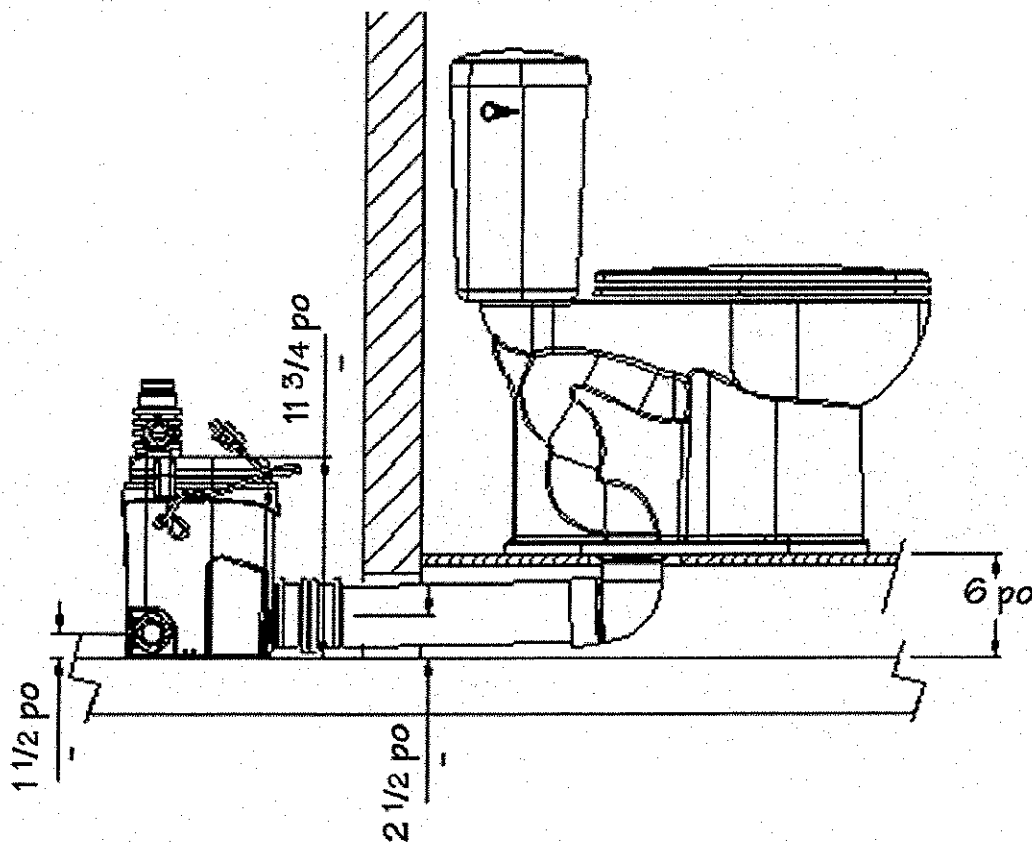
Suggested Installation / Installation proposée



Unit Dimensions / Dimensions de l'appareil



Connection to bowl / Raccordement à la cuvette



CANADA
SFA SANIFLO INC.
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UNITED STATES
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SFA

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SANIPLUS®

SANIBEST®

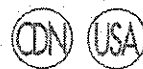
The user should retain these instructions for future reference • A lire attentivement et à conserver à titre d'information

This product must be installed in strict accordance with local plumbing codes.

Product should be installed by a licensed plumber.

Le produit doit être installé dans le respect des règlements sanitaires locaux.

Le produit doit être installé par un plombier qualifié.



INSTALLATION AND MAINTENANCE INSTRUCTIONS INSTRUCTIONS D'INSTALLATION ET D'ENTRETIEN

SANIPLUS® • SANIBEST®

1 INTRODUCTION

1.1 - GENERAL DESCRIPTION

The macerating unit is a residential pumping system for toilet and bathroom fixtures. The system is comprised of three major components :

- the macerating unit, which connects to the outlet of a rear spigot outlet toilet
- The toilet bowl
- The toilet tank

The macerating unit also consists of three major parts: the container which houses the operating mechanism; a pressure chamber which automatically activates and deactivates; the induction motor which drives the cutting blade and the impeller.

The macerating unit can simultaneously receive wastewater from several sanitary fixtures, e.g. bidet, hand basin, shower, bathtub, urinal, but only one water closet per unit.

Macerating units are designed for the disposal of human waste, toilet paper and water. They are not intended to be used for the disposal of kitchen waste, neither are they intended to be used for the disposal of waste water from such pump appliances as dishwashers and clothes washers. However these appliances can be connected to the Sanibest (not to a Saniplus), provided that they drain first into a laundry sink Sanitary fixtures connected to the macerating system must be located on the same level.

Macerating system must discharge into a minimum 3/4-inch sanitary drainage pipe. The macerating system will pump up to 15 feet for Saniplus, 18 feet for Sanibest vertically, with a 1/4" per foot gravity fall (minimum) constantly throughout the horizontal run to the point of discharge. If you require a vertical lift it should precede any "horizontal" run and should commence as near as possible to the discharge elbow. **Once you have started the horizontal run, you cannot change directions in a vertical manner.**

SANITARY INLETS

The macerating unit is equipped with two additional 1 1/2" (SANIBEST) or 2" (SANIPLUS) inlets, one on either side of the case. These inlets, which incorporate an internal check valve, are used to connect the drainpipe of other sanitary fixtures to the macerating unit.

Note: In case one of the inlets is not used by a fixture, you will need to block off this inlet with the plugs provided.

BATHTUB

Any regular bathtub can be used, as only the drainpipe connects to the macerating unit. When installing a bathtub, we recommend to build a platform out of 2 x 8-inch lumber, on which the tub is placed. This gives enough space for a p-trap and slope toward the wastewater inlets.

SHOWER STALL

When installing a shower a special raised shower base may be purchased. This eliminates the building of a platform. Alternatively, you may want to purchase a regular shower and also build a platform for it. We recommend to build a platform out of 2 x 8-inch lumber.

Note: Platform height. The actual distance between the p-trap of the additional fixture and the macerating unit determines the necessary clearance to install the p-trap and elevation required to ensure a minimum gravity flow of 1/4-inch per foot.

1.2 - NORMAL OPERATING CYCLE

As the flush is operated or as the bath, shower and lavatory discharge, the water and waste enter the unit and the water level begins to rise, triggering the micro-switch in the pressure chamber. This in turn activates the motor. The shredded waste is picked up by the impeller pump and discharged through a 3/4" outlet pipe to a sanitary sewer or soil stack.

Safety note: For safety the macerating unit should never be activated with the lid removed.

2 INSTALLATION

2.1 - PREPARING THE MACERATING UNIT

Push the elbow into opening, in the same direction as the outlet. Push rubber elbow onto the shoulder and secure with a gearclamp.

2.2 - CONNECTION OF THE OTHER SANITARY APPLIANCES

Saniplus : See page 3 drawing 7b

Sanibest : See page 6 drawing 7b

- To connect to the side entries of the case, use the side connector. Secure with clamps.
- Plug the unused inlet with blanking plug after greasing the joint.

Warning: Ensure when connecting a shower to the macerating unit that the underside of the shower tray is raised by at least 7 inches from the floor.

2.3 - WATER CLOSET ASSEMBLY

The tank comes with the fill and flush valve assembled, however, please ensure that all screws, nuts, etc. are tightened

2.4 - SYSTEM ASSEMBLY

Saniplus : See page 3 drawing 7a

Sanibest : See page 6 drawing 7a

1. Place the macerating unit in the desired spot and connect all inlet and outlet waste piping to the unit. (See Connection to discharge pipe work).
2. Place the spigot outlet of the toilet bowl firmly against the white accordion connector and mark the floor through the holes in the bowl.
3. Remove bowl and bore two holes approximately 2 1/4" deep with a 5/16" masonry drill bit. Insert plastic plugs into holes. If the floor is wood, bore a pilot hole with a 1/4" drill bit.
4. Place the bowl in front of the macerating unit and pull the accordion gasket all the way onto the rear spigot outlet. Attach with supplied gear clamp. Check that gasket and clamp are even all around.
5. Move the bowl over the holes in floor. Slip the plastic china protectors over the lag screws. Tighten lag screws (do not over tighten) and snap plastic cover caps in place.
6. Locate the tank to bowl kit and place foam gasket on the spud of the flush valve and over nut. Place tank on top of the bowl. Insert screws and gasket through the tank and tighten nuts underneath. Do not overtighten as this may damage the china.

2.5 - CONNECTION TO WATER SUPPLY

Connect the water supply hose to the fill valve.

2.6 - CONNECTION TO THE DISCHARGE PIPE WORK

These macerating units have an elbow, and a "step-down" bushing simply cut off the appropriate portion of the bushing in order to fit it to the discharge pipe. Use ridged wall pipe, not flexible pipe or hose, as flexible pipe may distort over time. Use 3/4" discharge pipe.

Optional : install a "full-port" ball or gate valve and a union in the discharge pipe in order to facilitate the removal of the macerating unit. Place the union or hose connector then the valve at the lower portion of the discharge pipe.

If you wish the unit to pump vertically and horizontally you may calculate that 3 feet of vertical lift is equivalent to 30 feet of "horizontal" run.

Each bend or change of direction causes minor losses, which must be deducted from the discharge performance figures in accordance with the usual head loss practice. (Rough guide: reduce discharge height by 3 feet for each 90° bend).

The discharge pipe work can be made from 3/4" diameter material. Copper (Type M), CPVC or PVC. Use long turn bends and not elbows, elbows are not normally available in plastic piping, use two 45° pieces back to back to make a 90° elbow.

The connection to the soil-stack or sewer pipe should be made with an approved wye fitting. When in doubt about this procedure please have a plumbing contractor install this for you.

2.7 - SEWER PIPE (COPPER, CAST IRON, PVC, ABS)

1. Install an appropriate wye fitting into the sewer pipe, (with 1 1/2" branch hub).

2. Read point 3a first if using a copper wye. Glue a bushing, ((spigot x FPT) 1 1/2" x 3/4") into the 1 1/2" hub of the Y fitting.

3. Screw male adapter, ((MPT x Hub) 3/4" x 3/4" sweat) into the bushing, when discharge piping is in copper buy brass adapter, when in CPVC buy CPVC adapter.

a. When in copper; solder a length of pipe to the male adapter first, allow to cool then screw assembly into female bushing into the branch socket. When soldering pipe systems together, wind a wet rag around the plastic to keep it cool. Maintain at least a distance of 6" between the plastic and the piece soldered. Use Teflon tape or 100% Teflon dope on male thread. Any other dope product will deteriorate plastic material.

b. When using CPVC material, use CPVC glue to glue the CPVC pipe into the ABS fitting. Caution: Do not use ABS glue on CPVC materials, as the plastic will not bond.

2.8 - CONNECTION TO ELECTRICAL SUPPLY

All wiring should be in accordance with the applicable electrical code in your territory. The macerating system requires a single-phase 120-volt, 15 Amp. supply. When installed in a bathroom, the receptacle should be 40 inches away (in a straight line) from a shower or bathtub. Connect only to receptacle protected by a ground fault circuit interrupter.

Warning: risk of electric shock - this pump is supplied with a grounding conductor and grounding type attachment plug to reduce the risk of electrical shock. Be certain that it is connected only to a properly grounded - type receptacle.

2.9 - CONNECTION TO A VENT SYSTEM

Saniplus : See page 3 drawing 7c

Sanibest : See page 6 drawing 7c

The macerating unit must be vented. There are two ways to vent the unit. It has 2 inlets on the top of the cover: a 1 1/2" cap and a hole of smaller diameter.

Europe : the cap should be closed (the plug is supplied) and the hole should be open.

North America : the unit must be connected to a vent system according to the plumbing codes. Put the waste inlet (provided) on the cap and clamp it down. Then, connect the vent pipe. Note that all fixtures connected to the system must also be vented.

Warning: Do not use an air admittance valve or a mechanical spring-loaded venting device, as these devices are one-way valves. The air pressure in and outside the macerating unit must be equal, a "cheater" vent will obstruct the airflow one direction.

NB : For installation in North America, the small diameter hole must be plugged with a plastic cap supplied (i).

2.10 - ACTIVATING THE UNIT

1. Ensure that the toilet is free of building debris prior to activating.
2. Open the shut-off valve and let the tank fill up.
3. Ensure power supply is on.
4. Flush several times with intervals in between depositing a few sheets of toilet paper into the bowl to check discharge piping. Usually, there should be no paper remaining in the bowl after each flush.

4 USAGE

The normal domain of application of SFA macerating units only concerns the disposal of human waste, toilet paper and water.

SANIPLUS is designed for family use only and cannot accept without damage the disposal of sanitary items such as condoms, tampons, sanitary pads and cotton swabs.

SANIBEST is a product conceived for heavier use, suitable for light commercial applications, and can occasionally accept disposal of sanitary items such as condoms, tampons and sanitary pads.

CAUTIONARY NOTES:

Do not discharge any acids, alkaloids, solvents painting, paint strippers, food waste, plastic bags, metal such as nails, hairpins, wood, building materials, kitty litter or anything that could halt or damage or corrode the unit. Disregarding the above might damage the macerating unit and shall void your warranty.

Do not hang bleach blocks or hydrochloride cleaners in the toilet tank. These solutions have been shown to deteriorate the plastic and neoprene components of the flush and fill valves, and may cause leaks. In the event of a power loss do not use the toilet or any other sanitary fixture connected to the macerating unit since it will not work until the power is restored.

The toilet works as a conventional flushing toilet and needs no maintenance in normal use. However, there is nothing wrong with cleaning out the macerating unit once a year. Do not use bleach (Be careful not to let water enter the electrical cord opening).

The macerating unit starts automatically once the toilet is flushed or the bath, shower, hand basin, etc. discharge and cease operation once the contents have been pumped away.

Whenever the unit is not to be used for long periods of time (vacation, power failure, maintenance, etc.) turn off the water supply to the tank and flush the unit to evacuate the water. No leakage into the bowl should ever be permitted from the tank.

In areas, which are prone to freezing, the total system must be properly winterized. This includes the draining of all pipes, the toilet tank and bowl and the macerating tank. The macerating system is simple to winterize. Pour a jug of plumbers' anti-freeze into the tank and flush the toilet. This will cause the macerating unit to activate and all remaining water will be replaced by plumber's anti-freeze. No parts or labour are warranted when a breakdown occurs due to freezing.

Ensure that there are no faucets left open. Drops will eventually fill up the pump and the resultant repeated start-stop of the motor may heat up to such an extent, that the thermal overload switch may eventually operate and automatically stop the motor, thus possibly causing a flood.

4 PROBLEM SOLVING

4.1 - CHECKUP

The macerating unit is very reliable. With normal use long service is assured. However, in certain cases an incident may occur which you may rectify yourself. Before taking any action check the following points:

1. Plumbing system. Flush system, water supply turned on.
2. Electrical system. G.F.C.I. breaker on. Receptacle on. Fuse okay. Breaker on. Male plug still in receptacle. Check that the thermal overload has not operated; (wait approximately 20 minutes for unit to reactivate).
3. Hydraulic system. Check that the discharge pipe and breather opening (vent pipe) are not blocked.

If the macerating unit turns on intermittently without the flush having been activated or water having been discharged, check that water out of the toilet tank is not leaking into the bowl. Or, that there is no leakage back into the macerating unit due to incorrect seating of the check valve and/or that the discharge elbow is seated properly.

4.2 - DISASSEMBLY FOR LITTLE INTERVENTION

As the unit is connected to the water and electrical supply, it is important to check that the following actions have been taken before removing the unit:

1. If possible, close off the water supply to the tank and close the ball or gate valve on the outlet pipe.
2. Pull the electrical cord out of the receptacle before removing unit.
3. Empty out as much water as possible from the toilet tank and the toilet bowl.
4. Disconnect toilet from unit. Remove toilet bowl and set aside against a wall to prevent from tipping over.
5. The use of a dry/wet type vacuum cleaner might assist you greatly in removing the residual water in the bowl or macerating unit.
6. When you have to remove the macerating unit, carefully disconnect the inlet drainpipes, (there might be residual water inside).
7. Side inlet valves clogged: remove the sleeves and use a screwdriver to free or clean the rubber flap if necessary.
8. For Saniplus, use the WC inlet to remove a foreign object with the help of a folded wire.

4.3 - RETURN AND REPAIR OF THE MACERATING UNIT

In the event that the unit needs to be returned for service, please call for possible options, or to inquire about an authorized repair shop in your area. When you are required to return the macerating unit to the manufacturer, please ensure that prior to shipping, the unit has been cleaned and disinfected inside and outside. A labour charge will be in effect for cleaning (\$50.00). Before returning any unit, a return authorization is needed from the manufacturer. Units returned without prior RGA number will be refused and returned collect.

If you return the macerating unit in its original packaging, please remove the discharge elbow and retain until re-assembly. If elbow is not removed, damage due to shipping might occur.

Please package the macerating unit properly with adequate shock absorbent material around it.

Send this package prepaid to the manufacturer, making sure to insure against loss and/or transit damage, (the amount of \$300.00 will suffice).

If any repairs are done outside the warranty period, or when the user has damaged the macerating unit, you will be apprised of repair costs. All repair work will be conducted on a pre-paid basis only.

MAINTENANCE (for qualified personnel only)

5.1 - See paragraph 4 PROBLEM SOVING (4.1 and 4.2)

5.2 - If you need to open the macerating unit, first release the discharge elbow, unclip the lid and pull up lid. In some cases the lid might be stuck to the case very tightly, (during assembly soapy water is used which dries up in time).

If required to remove motor from the case, unscrew motor retaining screws. Also release the insulator cable to the lid. Lift out motor assembly. Do not attempt to dismantle the motor assembly itself as it is "clipped" together. These clips may break off when trying to unclip them. In addition to damaging the clips the motor seals may be damaged when the lid is removed from the motor housing. The motor is filled with dielectric oil, do not remove it or replace with regular oil. Please note, the distributor purposely does not keep seals, bearings, or oil in stock.

5.3 - SANIPLUS FUNCTION CHECKUP

IMPELLER

Invert motor to gain access to pump chamber at the base. Unclip pump cover plate from motor housing.

Unscrew the pump impeller counter clockwise, releasing it from the spindle (block the spindle to unscrew). Clean pump chamber and discharge elbow and pipe work to ensure no blockage exists. Check that drive shaft rotates freely. Also check that the air relief-hole in the wall of the chamber is clear.

CUTTER BLADE

The blades can be easily removed if they ever require replacement. Simply remove the retaining circlip on top of the blade/rotor assembly and lift rotor/blade assembly off the spindle. The blades can now be slid sideways, removed and replaced.

Safety note: The blades are sharp and should be handled with extreme care.

5.4 - SANIBEST FUNCTION CHECKUP (see page 7 drawing 8)

Disconnect the inlet and WC connection, as well as electric supply and remove unit.

Remove discharge pipe from elbow (21c) (see page 8 exploded drawing). Remember that the vertical head of water will run back (see page 8 drawing 8-1)

Unscrew the 2 lid screws (33). Lift off the lid freeing the end lugs. (see page 7 drawing 8-2)

Unscrew the screw (33) holding the oval shaped electrical chamber to the case. (see page 7 drawing 8-3)

Lift out the motor. (see page 7 drawing 8-4)



The metallic dome on top of the motor may be hot so handle with care.

WARNING: Do not activate the motor when 'dry' for more than 5 seconds (irreparably destroyed seals).

REMOVAL OF BLADES

Unscrew the 3 blade screws (12). (see page 7 drawing 8-5)

Repair or exchange the blade assembly (5). (see page 7 drawing 8-6)

RE-ASSEMBLY OF THE BLADES

Before re-assembly, ensure that the drive coupling (4) is well pressed into the base of the pump (11).

5.5 - CAUTIONARY NOTE

Do not immerse unit totally in water. Do not let water enter the electrical cord entrance opening.

5.6 - REASSEMBLY OF THE LID

When replacing the lid grease the rubber gasket lightly with soapy water or dishwasher liquid. (Do not use Vaseline as this may expand the neoprene materials). **The gasket must be inside the lid first.** Start by pushing the lid down at the cord side first, then work your way around and tap on the lid with a rubber mallet or block of wood and a hammer. The lid must be seated in the snaps.



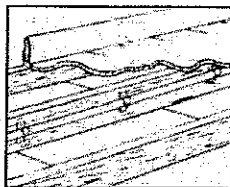
C

• The products are eligible to bear the CSA Mark Shown, with adjacent indicator "C" and "US".

ADVICE

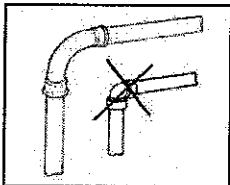
PIPE SUPPORTS

All sanitary pipe work must be supported, in accordance with the pipe manufacturer's recommendations. Avoid dipping or trapping, which may cause the build up of residual "solids" and sub-sequent blockage.



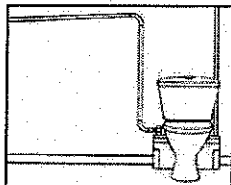
BENDS

Where possible long sweeping bends should be used. Do not use short elbows. If sweeping 90° elbows are not available use two 45° elbows to make a 90° turn.



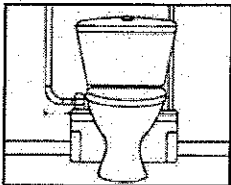
VERTICAL INSTALLATION FIRST

If vertical lift is required, this must precede the horizontal pipe run.



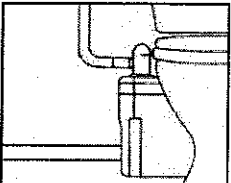
DIRECTLY VERTICAL

All vertical lifts should rise as directly above the unit as possible, allowing only for the need to clear the toilet tank. Any initial horizontal pipe run from the unit, prior to a vertical lift should not exceed 12".



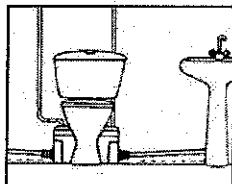
EASY ACCESS

The unit should be accessible and removable in the event of maintenance being required. During the installation a full-port ball valve should be installed at the base of any vertical discharge pipe work from the unit to allow easy service of the unit.



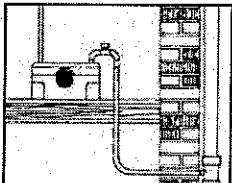
GRAVITY FALL

The unit accepts wastewater by gravity; it does not "vacuum" in water. All inlet pipe work must have a positive gravity fall, (1/4" per foot). All horizontal piping from the macerating unit must also have a positive gravity fall to allow free drainage when the pump stops.



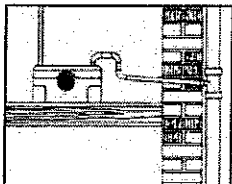
NO DIRECT FALL

Where the point of discharge into the soil stack is significantly lower than the base of the unit, a vacuum relief valve may need to be fitted at the highest point in the pipe run in order to avoid siphonage of the water seal.



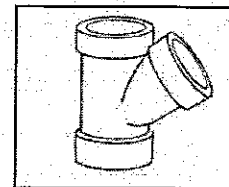
THREE FEET MINIMUM

The macerating unit must be installed at least 3 feet from the soil stack. This will allow the macerator to operate for an adequate period of time to ensure efficient waste reduction.



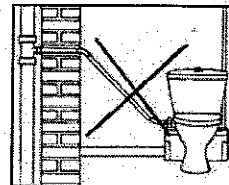
SOIL STACK CONNECTION

All discharge pipe work must be connected to the soil stack by an appropriate and approved connection. A "tee" or "y" fitting as shown is preferable.



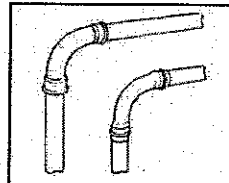
NO DIAGONAL "UPHILL" PIPE RUNS

All discharge pipe work from the unit should run either directly vertical upwards from it or in a horizontal plane (with a small gravity flow) to the point of discharge. Pipe work should not be installed with diagonal upward slope from the unit to the point of discharge.



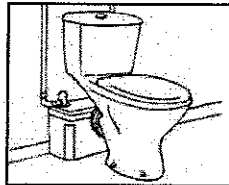
PIPE WORK

All pipe work should be either copper, PVC or CPVC (Do not use flexible pipes). Hangers should not be less than four feet apart to prevent pipe rattling.



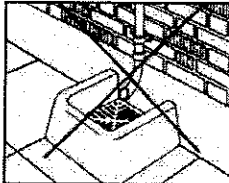
FLUSHING

Macerating systems requires a minimum of 6 liters (1.6 gallons) of water to operate satisfactorily.



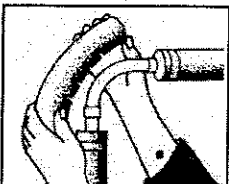
DISCHARGE

Never discharge directly into an open drain, fixture, manhole or rainwater drainpipe. It is illegal for it constitutes a health hazard. Direct connections into sanitary waste systems only, shall be acceptable.



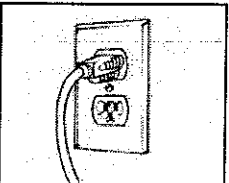
FREEZING

Ensure all pipe work susceptible to freezing is adequately insulated or heated. In unheated buildings, the toilet, piping and macerating unit must be properly winterized with "RV or plumbers" anti-freeze or drained completely.



ELECTRICITY

Before attempting any maintenance or servicing, the unit must be disconnected from the power source. The macerating system must be connected to a Ground Fault Circuit Interrupter.



TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	REMEDY
Motor turns normally but the water evacuates slowly from the bowl, (flush incomplete).	Discharge pipe blocked or valve not vented properly.	Clean out the piping and air breather hole.
Waste build up in bowl.	Inadequate water supply from reservoir.	Check and/or adjust water level in reservoir.
The macerating unit does not start up. Water does not evacuate.	Power supply off. Thermal overload cut out.	Wait for thermal overload to engage (approx. 20 min).
The motor hums but does not turn the water does not evacuate.	Foreign body blocking the macerating blades. Defective capacitor.	See "dismantling".
Water goes down slowly and motor works intermittently.	Clogged up (sanitary napkin, newspaper, plugged breather hole etc.).	Flush 3 or 4 times to clear. Cleaning or dismantling may be required. Clean out the breather hole.
The water evacuates from the toilet but the motor runs for a very long time, thermal overload activates.	Kinked/blocked discharge pipe, damaged membrane, defective impeller, and partially blocked pump.	Check installation.
After evacuation the motor engages several times in succession before it stops completely.	Water siphons back into the macerating unit. Check valve is not functioning properly.	Flush once or twice with clean water to clear valve or remove valve to clean.
Motor turns noisily without stopping or pumping.	Siphonage or insufficient back pressure in discharge pipe, causing airlock. Foreign object.	Modify discharge pipe run to eliminate siphonage and/or increase backpressure. E.g. reduce pipe size, put extra bend in run. Remove foreign object.
After evacuation the motor starts, stops, and re-engages indefinitely.	Water leaking from reservoir into bowl. Faulty non-return check valve.	Check flush valve. Check and clean non-return check valve.
For Saniplus, the motor turns with a rattling noise.	Solid item has fallen into the grille of the macerating unit.	Clear object from grille area.
Water backs up into shower tray or bathtub.	Inadequate gravity-fall into macerating unit or blockage in drain piping. Faulty inlet control flap.	1/4" per foot gravity fall minimum into macerating unit from other sanitary fixtures. Clean out the flap.

When claiming a warranty repair we will need the information you have written down below. Please ensure that you have all particulars available when requesting warranty work.

Name Owner: _____

Installation Address: _____

Purchased From: _____

Installed By: _____

Date of Purchase: _____

Serial Number: _____

Date of Manufacture: _____ (see manufacturers' tag on unit)

LIMITED WARRANTY

Warranty period two-year from date of purchase

Subject to the conditions listed below, SFA-SANIFLO INC. (hereinafter called the « Company ») guarantees to repair or at its option replace the product or any component thereof, which, in the opinion of the Company, is faulty or below standard as a result of inferior workmanship or materials.

CONDITIONS

The conditions of this guarantee are :

1. The product must not have been subjected to misuse, neglect, accident or damaging products, in accordance with the paragraph « USAGE » of these Installation Instructions.
2. The product must have been connected to a single phase 120V, 60Hz electrical supply.
3. The alleged fault or defect must be notified to the company, within the warranty period.

PART OR PRODUCT EXCHANGE

The product will be exchanged, free of charge, at the original resellers place of business only, upon the following conditions being fulfilled :

1. The customer needs a « return authorization » number from the company to authorize and validate the exchange.
2. The customer must supply a copy of their invoice to validate the request for an exchange.

LIMITATIONS

1. Fill and flush mechanism are guaranteed as per OEM warranty only.
2. Vitreous china are guaranteed only for a factory defect.
3. Cost of disconnection and reconnection (ie labor charges) are not covered by the warranty and are end-users responsibility.
4. Cost of mail or freight when a part or parts of the system have to be repaired at the company are not covered by this warranty.
5. In no event shall the company be liable for any special, incidental or consequential damage, loss, or injury of whatsoever nature or kind arising from or in connection with the product or any component thereof.
6. The guarantee is transferable only when the product remains at the same premises as where it was installed initially.

Except as set forth in this Limited Warranty, the company disclaims all other warranties, express or implied, with respect to the product or any component thereof including, but not limited to, all implied warranties for merchantability and fitness for a particular purpose

For Service and other inquiries, please call either of the addresses listed below.

United States
SFA-SANIFLO INC.
105 Newfield Avenue, Suite A
Edison, NJ 08837

Canada
SFA-SANIFLO INC.
1-685 Speedvale Avenue West
Guelph ON
N1K 1E6

Customer toll free: 800-571-8191
Telephone: 732-225-6070
Telefax: 732-225-6072
Email: sfasales@saniflo.com
Web Site: www.saniflo.com

Customer toll free: 800-363-5874 English
Customer toll free: 800-877-8538 French
Telephone: 519-824-1134
Telefax: 519-824-1143
Email: sfasales@saniflo.com
Web Site: www.saniflo.ca

United States
SFA-SANIFLO INC.
105 Newfield Avenue, Suite A
Edison, NJ 08837

Customer toll free: 800-571-8191
Telephone: 732-225-6070
Telefax: 732-225-6072
Email: sfasales@saniflo.com
Web Site: www.saniflo.com

Canada
SFA-SANIFLO INC.
1-685 Speedvale Avenue West
Guelph (Ontario)
N1K 1E6

Customer toll free: 800-363-5874 English
Customer toll free: 800-877-8538 French
Telephone: 519-824-1134
Telefax: 519-824-1143
Email: sfasales@saniflo.com
Web Site: www.saniflo.ca

sewer or pressure sewer system. A nongrinding pump or ejector shall be capable of passing a 1.5-inch-diameter (38 mm) solid ball, and the discharge piping shall be not less than 2 inches (51 mm) in diameter. The discharge piping of grinding pumps shall be not less than 1.25 inches (32 mm) in diameter. A check valve and a gate valve located on the discharge side of the check valve shall be installed in the pump or ejector discharge piping between the pump or ejector and the drainage system.

Reason: The current text implies a check valve is required but does not specifically state the requirement. In fact, the exception to Section 712.2 requires only the check valve in one-and-two family dwellings even though the section does not require it. The proposed text corrects the problem.

Public Hearing: Committee: AS AM D
Assembly: ASF DF

P81-01

712.4.1 (IRC T. P2701.1 & P3007.2.1))

Proponent: Patrick J. Higgins, P.J. Higgins & Associates, Inc.

THIS PROPOSAL IS ON THE AGENDA OF THE IPC AND THE IRC PLUMBING CODE DEVELOPMENT COMMITTEES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

Revise as follows:

1. IPC 712.4.1 Macerating toilet systems. Macerating toilet systems shall comply with CSA B45.9 or ASME A112.3.4 and shall be installed in accordance with manufacturer's installation instructions.

2. IRC | | |---| | TABLE P2701.1
PLUMBING FIXTURES, FAUCETS
AND FIXTURE FITTINGS | |---|

MATERIAL	STANDARD
Macerating Toilet Systems and Related Components	ASME A112.3.4

IRC P3007.2.1 Drainage piping. The system of drainage piping below the sewer level shall be installed and vented in a manner similar to that of the gravity system. Only such drains that must be lifted for discharge shall be discharged into sumps. All other drains shall be discharged by gravity.

Exception: Macerating toilet systems shall be permitted as an alternate to the sewage pump or ejector system. The macerating toilet system shall comply with ASME A112.3.4 or CSA B45.9 and shall be installed in accordance with manufacturer's instructions.

Reason: This new ASME standard for macerating systems should be referenced within the IPC and IRC.

Analysis: The proponent had not submitted the referenced standards for review prior to the printing of the monograph. If the standards are submitted within a reasonable time frame, staff will review them and provide the results to the committee members prior to the code hearings.

Public Hearing: Committee: AS AM D
Assembly: ASF DF

P82-01

802.1.1

Proponents: Brien Bellous, representing City of Columbus, Ohio

Jud Collins, representing Oklahoma State Health Department

Robert G. Konyndyk, representing State Plumbing Board, Michigan

Revise as follows:

802.1.1 Food handling. Equipment and fixtures utilized for the storage, preparation and handling of food shall discharge through an indirect waste pipe by means of an air gap.

Exception: ~~This requirement shall not apply to dishwashing machines and dishwashing sinks.~~

Reason: (Bellous) The reference in the exception to dishwashing machines is in direct conflict with the indirect requirements in Section 409.3.1 and 409.3.2. Both sections require the discharge from dishwashing machines shall be through an air gap or air break. This section refers to the discharge of equipment and fixtures utilized for the storage, preparation and handling of food. The exception is not related to the storage, handling or preparation of food. In addition, the exception infers that an indirect connection does not apply and a direct connection is permitted.

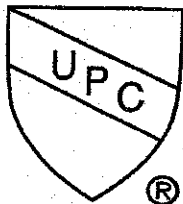
(Collins) Dishwashing machines and dishwashing sinks are not utilized for the storage, preparation or handling of food. Therefore, it is not necessary to state that this requirement does not apply to them. This proposed change relocates the dishwashing machine waste connection requirements from Chapter 4 and places the specifics in Chapter 8.

(Konyndyk) The exception to Section 802.1.1 does not belong in this section. Current text contradicts the specific requirement under Section 409.3.1 and 409.3.2 for domestic and commercial dishwashing machines.

Public Hearing: Committee: AS AM D
Assembly: ASF DF

IAPMO RESEARCH AND TESTING, INC.

5001 East Philadelphia Street, Ontario, California 91761-2816 • (909) 472-4100 Fax (909) 472-4244 • www.iapmo.org



CERTIFICATE OF LISTING

IAPMO Research and Testing, Inc. is a product certification body which tests and inspects samples taken from the supplier's stock or from the market or a combination of both to verify compliance to the requirements of applicable codes and standards. This activity is coupled with periodic surveillance of the supplier's factory and warehouses as well as the assessment of the supplier's Quality Assurance System. This listing is subject to the conditions set forth in the characteristics below and is not to be construed as any recommendation, assurance or guarantee by IAPMO Research and Testing, Inc. of the product acceptance by Authorities Having Jurisdiction.

Effective Date: February 2007

Void After: February 2008

Product: Macerating Toilet Systems and
Related Components

File No. 3545

Issued To: SFA Saniflo Inc.
1-685 Speedvale Ave. West
Guelph, Ontario N1K 1E6
Canada

IDENTIFICATION: Manufacturer's name or trademark, model number, ASME A112.3.4
and the UPC® certification mark.

CHARACTERISTICS: A macerating toilet system, consisting of a macerating tank
and integral grinder/pump mechanism, water closet and related
components. To be installed per the manufacturer's
instructions and in accordance with the latest edition of the
Uniform Plumbing Code.

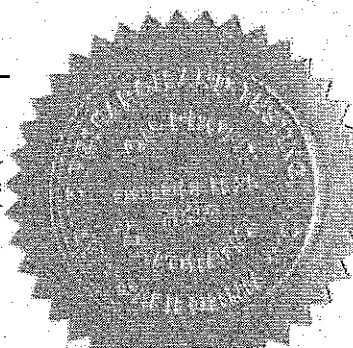
Products comply with the applicable sections of the latest
edition of the Uniform Plumbing Code®. Manufactured in
compliance with ASME A112.3.4-2000(RA2004).

MODELS: Saniplus Sanipro
Saniflush Sanibest


Chairman, Product Certification Committee


Executive Director

This listing is for the period indicated herein and is void after the date shown above. Any change in material, manufacturing process, marking or design without having first obtained the approval of the Product Certification Committee, or any evidence of non-compliance with applicable codes and standards or of inferior workmanship, may be deemed sufficient cause for revocation of this listing. Reproduction of or reference to this form for advertising purposes may be made only by specific written permission of IAPMO Research and Testing, Inc. Any alteration of this certificate could be grounds for revocation of the listing.





JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

May 6, 2008

TO: Members of the State Plumbing Board
FROM: Robert G. Konyndyk, Chief, Plumbing Division *rk*
SUBJECT: Product Approval Request for Kohler Co., Personal Hygiene Toilet Seats

The applicant has requested a certificate to clarify the acceptance of products for products which have not had conformance standards developed.

APPLICANT REPRESENTATIVE:

Mr. Daniel Bartz

APPLICANT:

Kohler Company
444 Highland Drive, Bldg. #83, M.S. 073
Kohler, Wisconsin 53044

AUTHORITY:

Section 21 of Act 230, 1972 being section 125.1521 of the Michigan Compiled Laws.

PRODUCTS:

Kohler Co., Personal Hygiene Toilet Seats, named C³™ - 200, Model K-4709 and C³™ - 100, Model K-4711.

APPLICATION:

The water closet seats are installed in private residences to take the place of a bidet fixture.

Providing for Michigan's Safety in the Built Environment

BUREAU OF CONSTRUCTION CODES
P.O. BOX 30254 • LANSING, MICHIGAN 48909
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www.michigan.gov

Members of the State Plumbing Board

Page 2

May 6, 2008

APPLICABLE CODE SECTION:

Section 408.3 Bidet water temperature – 110 degree limit

Section 608 Protection of Potable Water Supply

LABORATORY TEST:

CSA- Canadian Standards Association, Project 1799516, 19 June 2006

For conformance to ASME A112.19.19

AGENCY APPROVALS:

CSA- Canadian Standards Association

IAPMO- International Association of Plumbing and Mechanical Officials

CONDITIONS OF USE AND INSTALLATION:

1. All requirements of the Michigan Plumbing Code shall be applicable.
2. Shall be installed in accordance with manufacturer's installation instructions.

RECOMMENDATION:

Staff recommends that the product be forwarded to the commission for approval.

RGK/mkr



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

May 6, 2008

Mr. Daniel Bartz
Kohler Company
444 Highland Drive, Bldg. #83, M.S. 073
Kohler, Wisconsin 53044

Dear Mr. Bartz:

The Plumbing Division, Bureau of Construction Codes, has received your product approval application for Kohler Co., Personal Hygiene Toilet Seats, named C³™ - 200, Model K-4709 and C³™ - 100, Model K-4711.

The State Plumbing Board will review your product at their scheduled board meeting on Tuesday, June 3, 2008, Conference Room No. 3, 2501 Woodlake Circle, Okemos, Michigan. These are public meetings should you desire to attend and present information related to your product. If approved by the board your product will be referred to the Construction Code Commission for final approval.

If you have any further questions prior to your written response contact me at 517/241-9330.

Sincerely,

Robert G. Konyndyk, Chief
Plumbing Division

RGK/mkr

Providing for Michigan's Safety in the Built Environment

BUREAU OF CONSTRUCTION CODES
P.O. BOX 30254 • LANSING, MICHIGAN 48909
Telephone (517) 241-9330 • Fax (517) 373-8547
www.michigan.gov

Petition Application for Approval of Material, Product or Method

Michigan Department of Labor & Economic Growth

Bureau of Construction Codes

P.O. Box 30255, Lansing, MI 48909

www.michigan.gov/bcc

Tran Info: 99 13909308-1 04/11/08

Chk#: 2798230 Amt: \$500.00

ID: KOLHER

Agency Use Only

BCCP-08-009
\$500 4-11-08

Application Fee: \$500.00

Authority: 1972 PA 230
Completion: Mandatory
Penalty: Use of material, product or method will not be approved

The Department of Labor and Economic Growth will not discriminate against any individual or group because of race, sex, religion, age, national origin, color, marital status, disability, or political beliefs. If you need help with reading, writing, hearing, etc., under the Americans with Disabilities Act, you may make your needs known to this agency.

PRODUCT INFORMATION

NATURE OF APPLICATION

☐ Material ☒ Product ☐ Method of Manufacture or Construction ☐ Component

CODE UNDER WHICH APPROVAL IS SOUGHT

☐ Building (140) ☐ Electrical (115) ☐ Mechanical (130) ☒ Plumbing (98)

NAME OF MATERIAL, PRODUCT OR METHOD OF MANUFACTURE (Limit To One Item Per Application)

Kohler Co. - Personal Hygiene Toilet Seats

OTHER IDENTIFICATION (Model Number)

Model # K-4709 - Name: C3-200 TM Model # K-4711 - Name: C3-100 TM

DESCRIPTION (Use Additional Sheets If Necessary)

K-4709 Elongated Seat w/ Bidet Function, In-line Heater and remote control.
K-4711 Same Elongated Seat w/Bidet Function, Tank heater less remote control.

INTENDED USE (Use Additional Sheets If Necessary)

Consumer's personal hygiene. The products are installed on elongated toilets as any toilet seat would be installed. There is a tee connection to the water supply stop riser serving the fill valve. There is a grounded electrical cord.

DATA SUBMITTED

☒ Letter ☒ Manual ☒ Standards ☒ Installation Instructions ☐ Display Catalog

Reports
☐ ICC - NES
☐ BOCA - NES
☐ ICBO
☐ SBCC
☐ NRB
☒ Other

☐ Product Sample or Model
☐ Prior Approvals by Other Agencies
☐ Recommendations by Model Code Bodies

LABORATORY TEST BY

Kohler Co. Test Laboratory, Canadian Standards Association, IAPMO and UL Tested and Certified.

PILOT SERVICE EXPERIENCE AND CONDITIONS (Use Additional Sheets If Necessary)

We have the C3-200 and C3-100 Personal Hygiene Toilet Seats installed in private residences throughout the United States. To date for 2008 we have 2,168 of the C3-200 and 1,790 C3-100 models installed in the field with no failures reported.

RESTRICTIONS FOR USE (Use Additional Sheets If Necessary)

There are currently no restrictions for these products. These product are listed by IAPMO and UPC compliant. They are accepted in Chicago, Massachusetts, and the western half of the US.

APPLICANT (Note: All correspondence will be sent to this address)

NAME OF COMPANY

Kohler Co.

APPLICANT NAME

Daniel J. Bartz

ADDRESS

444 Highland Drive, Bldg. 83, M.S. 073

CITY

Kohler

STATE

Wisconsin

ZIP CODE

53044

TELEPHONE NUMBER (Include Area Code)

()

APPLICANT SIGNATURE (Must be an original signature)

DATE

4/9/08

FAX NUMBER (Include Area Code)

()



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

May 7, 2008

TO: Members of the State Plumbing Board
FROM: Robert G. Konyndyk, Chief, Plumbing Division *RGK*
SUBJECT: Hill-Rom Patient Care Module, Models 520 and 300 Floor Mount units

The product manufacturer has requested approval due to the absence of an approved standard in the present code for this type of device. Further, the manufacturer has been issued a Certificate of Acceptance for Model 200, January 7, 2004.

APPLICANT REPRESENTATIVE:

Mr. Ron Schwipps

APPLICANT:

Hill-Rom
1069 State Route 46 East
Batesville, IN 47006

AUTHORITY:

Section 21 of Act 230, 1972 being section 125.1521 of the Michigan Compiled Laws.

PRODUCT:

Hill-Rom Patient Care Module, Models 520 and 300 Floor Mount unit

APPLICATION:

Combination lavatory and concealed water closet module positioned at a patient's bedside as a hygienic replacement for bedpans and commodes.

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P.O. BOX 30254 • LANSING, MICHIGAN 48909
Telephone (517) 241-9330 • Fax (517) 373-8547
www.michigan.gov

APPLICABLE CODE SECTION:

608.3.1 Special Equipment Water supply protections – pressure type VB, 6 foot above
609 Health Care Plumbing
609.4 Vacuum breaker location

CONDITIONS OF USE AND INSTALLATION:

1. All requirements of the Michigan Plumbing Code shall be applicable.
2. To be installed in hospitals or care institutions only.
3. The units shall not be provided with dialysis connections which are identified by the manufacturer as Utility Connection Options.
4. The request from the hospital or care institutions must be approved by the Health Department having jurisdiction, and meet their conditions prior to review by the State Plumbing Board.
5. Such installations would be in addition to any required hand washing or toilet facilities, and could not be substituted for required facilities.
6. An acceptable means of providing privacy, such as a screen or curtain, must be provided in conjunction with the installation of this equipment.
7. Allowing the installation of such units, which do not conform to required fixture numbers for water closets and lavatories, shall be based upon the design need for proper patient care and shall not establish a precedent.
8. A properly installed approved vacuum breaker shall be located downstream from the flushometer valve at the required height.
9. A properly installed approved vacuum breaker shall be provided for the bedpan washer connection at the required height location.

RECOMMENDATION:

Staff has requested additional information which must be evaluated prior to making a recommendation.

RGK/mkr



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

May 7, 2008

Mr. Ron Schwipps
Hill-Rom
1069 State Route 46 East
Batesville, IN 47006

Dear Mr. Schwipps:

The Plumbing Division, Bureau of Construction Codes, has received your product approval application for the Hill-Rom Patient Care Module, Models 520 and 300 Floor Mount units.

The State Plumbing Board will review your product at their scheduled board meeting following the evaluation of the recently requested information during our telephone conversation. These are public meetings should you desire to attend and present information related to your product. If approved by the board, your product will be referred to the Construction Code Commission for final approval.

If you have any further questions please contact me at 517/241-9330.

Sincerely,

Robert G. Konyndyk, Chief
Plumbing Division

RGK/mkr

Providing for Michigan's Safety in the Built Environment

BUREAU OF CONSTRUCTION CODES
P.O. BOX 30254 • LANSING, MICHIGAN 48909
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Petition Application for Approval of Material, Product or Method
Michigan Department of Labor & Economic Growth
Bureau of Construction Codes
P.O. Box 30255, Lansing, MI 48909
www.michigan.gov/bcc

Agency Use Only

Application Fee: \$500.00

BCCP-08-008
\$500 03/31/08

Authority: 1972 PA 230
Completion: Mandatory
Penalty: Use of material, product or method will not be approved

The Department of Labor and Economic Growth will not discriminate against any individual or group because of race, sex, religion, age, national origin, color, marital status, disability, or political beliefs. If you need help with reading, writing, hearing, etc., under the Americans with Disabilities Act, you may make your needs known to this agency.

PRODUCT INFORMATION

NATURE OF APPLICATION

☐ Material ☒ Product ☐ Method of Manufacture or Construction ☐ Component

CODE UNDER WHICH APPROVAL IS SOUGHT

☐ Building (140) ☐ Electrical (115) ☐ Mechanical (130) ☒ Plumbing (98)

NAME OF MATERIAL, PRODUCT OR METHOD OF MANUFACTURE (Limit To One Item Per Application)

Hill-Rom Patient Care Module

OTHER IDENTIFICATION (Model Number)

Model 520 Floor Mount, Model 300 Floor Mount

DESCRIPTION (Use Additional Sheets If Necessary)

See attached Technical Data Sheets 143208 & 143211.

Products are a modification to previously approved Model 200 Floor Mount (Approval # 1530-PA).

INTENDED USE (Use Additional Sheets If Necessary)

Hospitals, ICU environment, for patient use.

DATA SUBMITTED

☒ Letter ☒ Manual ☒ Standards ☒ Installation Instructions ☒ Display Catalog

Reports

☐ ICC - NES
☐ BOCA - NES
☐ ICBO
☐ SBCC
☐ NRB
☐ Other

☐ Product Sample or Model
☐ Prior Approvals by Other Agencies
☐ Recommendations by Model Code Bodies

LABORATORY TEST BY

PILOT SERVICE EXPERIENCE AND CONDITIONS (Use Additional Sheets If Necessary)

Models are a change to the cabinet housing the plumbing components of previously approved model. Plumbing components and configuration are the same as previous model. Cabinet seat cover & doors have been changed (Reference Service Manual MAN289 for details).

RESTRICTIONS FOR USE (Use Additional Sheets If Necessary)

Only Models 520 and 300 Floor Mounted units. The Model 415 and Model 520 Wall mount are not to be included in review. Only Remote Flush Valve option to be available.

APPLICANT (Note: All correspondence will be sent to this address)

NAME OF COMPANY

Hill-Rom, Patient Environment Solutions

APPLICANT NAME

Ron Schwipps

ADDRESS

1069 State Route 46 East

CITY

Batesville

STATE

Indiana

ZIP CODE

47006

TELEPHONE NUMBER (Include Area Code)

APPLICANT SIGNATURE (Must be an original signature)

Ron Schwipps

DATE

3/05/08

FAX NUMBER (Include Area Code)

**MICHIGAN DEPARTMENT OF LABOR & ECONOMIC GROWTH
BUREAU OF CONSTRUCTION CODES & FIRE SAFETY
P.O. BOX 30254
LANSING, MI 48909**

**CERTIFICATE OF ACCEPTABILITY
PRODUCT APPROVAL**

No. 1530-PA

Issued by the Michigan State Construction Code Commission in accordance with authority granted under 1972 PA 230, MCL 125.1521, on the recommendation of the State Plumbing Board.

MANUFACTURER: Hill-Rom
1069 State Route 46 East
Batesville, IN 47006

PRODUCT: Hill-Rom Patient Care Module, Model 200 Floor Mount

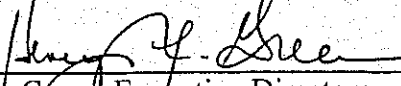
MANUFACTURER'S DESIGNATION: Hill-Rom Patient Care Module, Model 200 Floor Mount

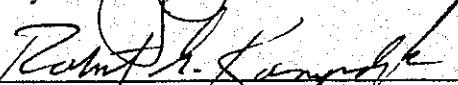
CONDITIONS OF USE AND INSTALLATION:

1. All requirements of the Michigan Plumbing Code shall be applicable.
2. To be installed in hospitals or care institutions only.
3. The request from the hospital or care institutions must be approved by the Health Department having jurisdiction, and meet their conditions prior to review by the State Plumbing Board.
4. Such installations would be in addition to any required hand washing or toilet facilities, and could not be substituted for required facilities.
5. An acceptable means of providing privacy, such as a screen or curtain, must be provided in conjunction with the installation of this equipment.
6. Allowing the installation of such units, which do not conform with standards for water closets and lavatories, shall be based upon need for proper patient care and shall not establish a precedent for considering similar units for other purposes.
7. A properly installed approved vacuum breaker shall be located downstream from the flushometer valve at the required height.
8. A properly installed approved vacuum breaker shall be provided for the bedpan washer connection at the required height location.

THIS CERTIFICATE SHALL NOT BE USED FOR ADVERTISING PURPOSES.

By Direction of the Construction Code Commission


Henry L. Green, Executive Director


Robert G. Konyndyk, Chief, Plumbing Division

Effective Date: January 7, 2004



December 7, 2007

Mr. Robert Konyndyk, Chief
P.O. Box 30254
Lansing, MI. 48909

Dear Mr. Konyndyk:

I would like to submit to the Plumbing Division, Bureau of Construction Codes, a request to add two additional models of the Hill-Rom Patient Care Module to our product approval certificate No. 1530-PA.

Hill-Rom has recently introduced two new models of the Patient Care Module. These products utilize the exact same plumbing components and configuration as our previously approved Model 200 Floor Mount unit. We have changed the cabinetry housing the plumbing components to improve the quality and ascetics of the cabinet.

The two new models we would like to submit are;

- Hill-Rom Patient Care Module, Model 520 Floor Mount
- Hill-Rom Patient Care Module, Model 300 Floor Mount

I have included the product documentation and drawings for your review. The Model 415 and Model 520 Wall mount are not to be included in this submittal.

The same conditions of use and installation would apply to these new models as previously stipulated.

Please let me know if you have any questions or concerns.

Sincerely,

Ron Schwipps
Product Improvement Engineer
Patient Environment Solutions

Tel: 812.931.3470

Fax: 812.934.1007

Email: ron.schwipps@hill-rom.com

web site: <http://www.hill-rom.com/>

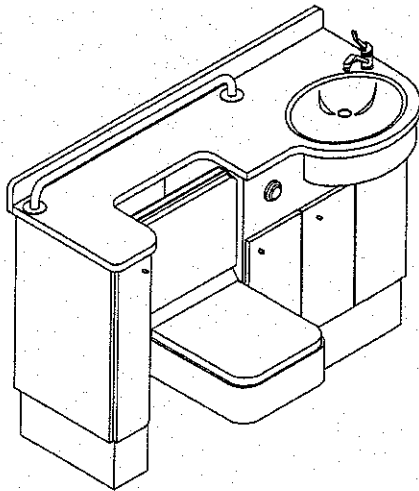
Patient Care Module—Model 300 (P590030)

TECHNICAL DATA SHEET

Introduction

The Patient Care Module (PCM) is a free-standing, wall-mounted cabinet constructed of pre-formed, exterior, marine glue plywood with a polyester-resin overlay finished with high-pressure laminate (see figure 1 on page 1). It conceals the patient water closet, flush valve, and bedpan washer rigid diverter arm.

Figure 1. Patient Care Module



Features

The Patient Care Module Model 300 offers these features:

- A standard, vitreous, china water closet with no pivoting or moving plumbing connections to wear out
- A water closet that is concealed when not in use
- A built-in, bedpan washer, rigid diverter arm
- A location close to the bed (depending on room layout)
- A bedside seat
- ADA compliance*

* With proper installation Model 300 will meet requirements of ADA standard for Accessible Design (28 CFR, part 36). Consult code requirements for proper placement within rooms. Compliance is subject to the interpretation and requirements of the local code authority.

Options include these:

- A faucet with a wrist-blade water controls, infrared water controls, or gooseneck spout with foot pedal water controls
- Modified cabinet construction, including squared ends for corner installation
- Corian® countertops, with or without an integral Corian® sink
- Utility connections and drain
- Utility mixing valve with temperature gauge

1. Corian® is a registered trademark of E. I. du Pont de Nemours and Company.

Patient Care Module—Model 300 (P590030)

TECHNICAL DATA SHEET

Figure 2. Standard Dimensions

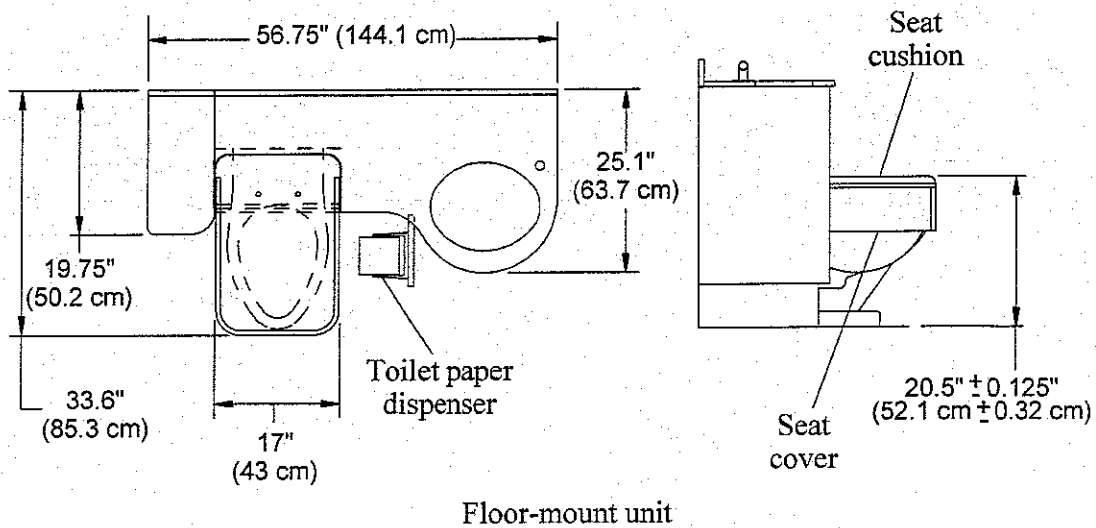
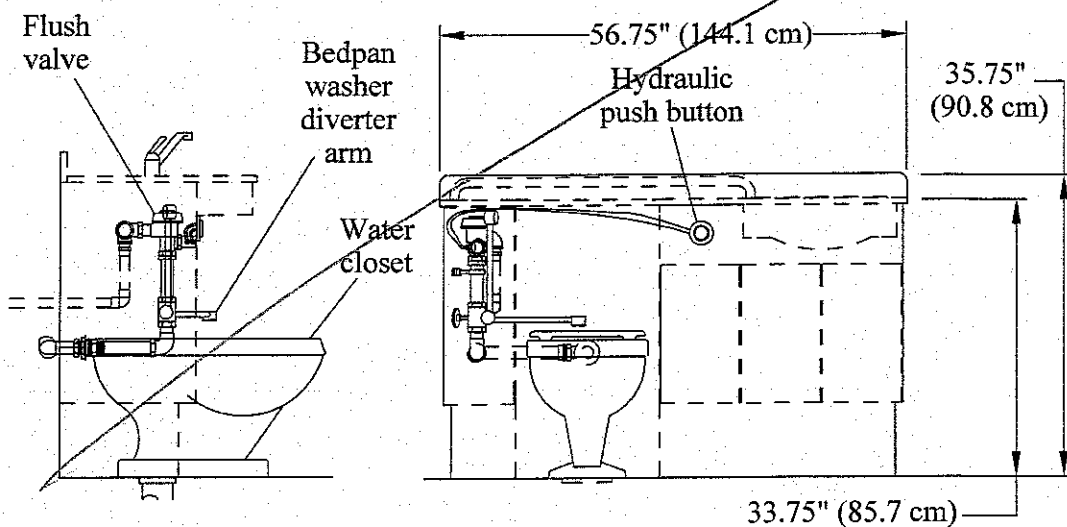


Figure 3. Unit with Standard Flush Valve Option



Patient Care Module—Model 300 (P590030)

TECHNICAL DATA SHEET

Table 6. Faucet Options

Part Number	Description
59000013000	Faucet, standard
59000138000	Patient Care Module, faucet, gooseneck, (wrist-blade), Chicago®
59007900003	Gooseneck with foot pedal faucet
59002175000	Patient Care Module, faucet (lavatory), infrared, Hydrotek®

a. Chicago® is a registered trademark of Chicago Faucet Company.

b. Hydrotek® is a registered trademark of Hydrotek Corporation.

Table 7. Utility Connection Options

Part Number	Description
59002134000	Utility connection box, single-temperature, lh (standard cabinet on sink side, radiused-edge)
59002133000	Utility connection box, single-temperature, rh, (standard cabinet on sink side, radiused-edge)
59002170000	Utility connection box, dual-temperature, lh (standard cabinet on sink side, radiused-edge)
59002169000	Utility connection box, dual-temperature, rh (standard cabinet on sink side, radiused-edge)
59000090000	Supply faucet, utility connection

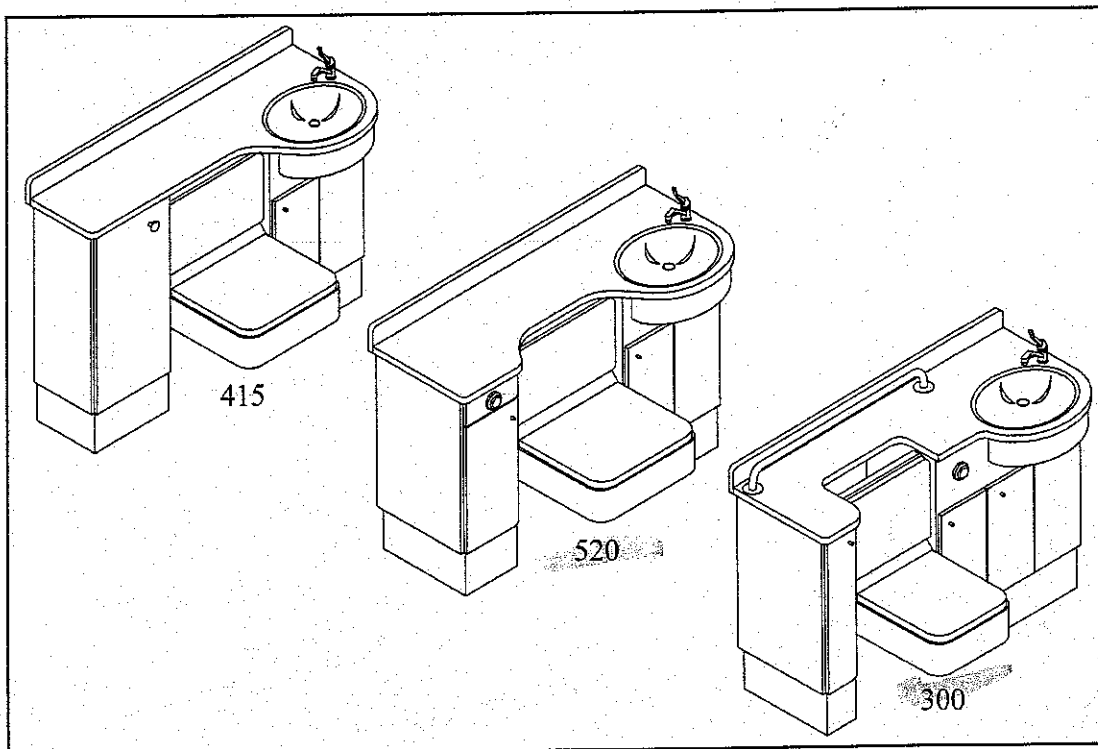
Table 8. Cabinet End and Countertop Design Options

Part Number	Description
20573531	Laminated counter, radiused both sides, rh
20573532	Laminated counter, scribe sink, rh
20573533	Laminated counter, scribe closet, rh
20573534	Laminated counter, scribe both, rh
20573535	Laminated counter, radiused both sides, lh
20573536	Laminated counter, scribe sink, lh
20573537	Laminated counter, scribe closet, lh
20573538	Laminated counter, scribe both, lh
20573631	Corian® counter, radiused both sides, rh
20573632	Corian® counter, scribe sink, rh
20573633	Corian® counter, scribe closet, rh
20573634	Corian® counter, scribe both, rh
20573635	Corian® counter, radiused both sides, lh
20573636	Corian® counter, scribe sink, lh
20573637	Corian® counter, scribe closet, lh
20573638	Corian® counter, scribe both, lh

a. Corian® is a registered trademark of E. I. du Pont de Nemours and Company.

INSTALLATION INSTRUCTIONS

Patient Care Module (PCM) From Hill-Rom

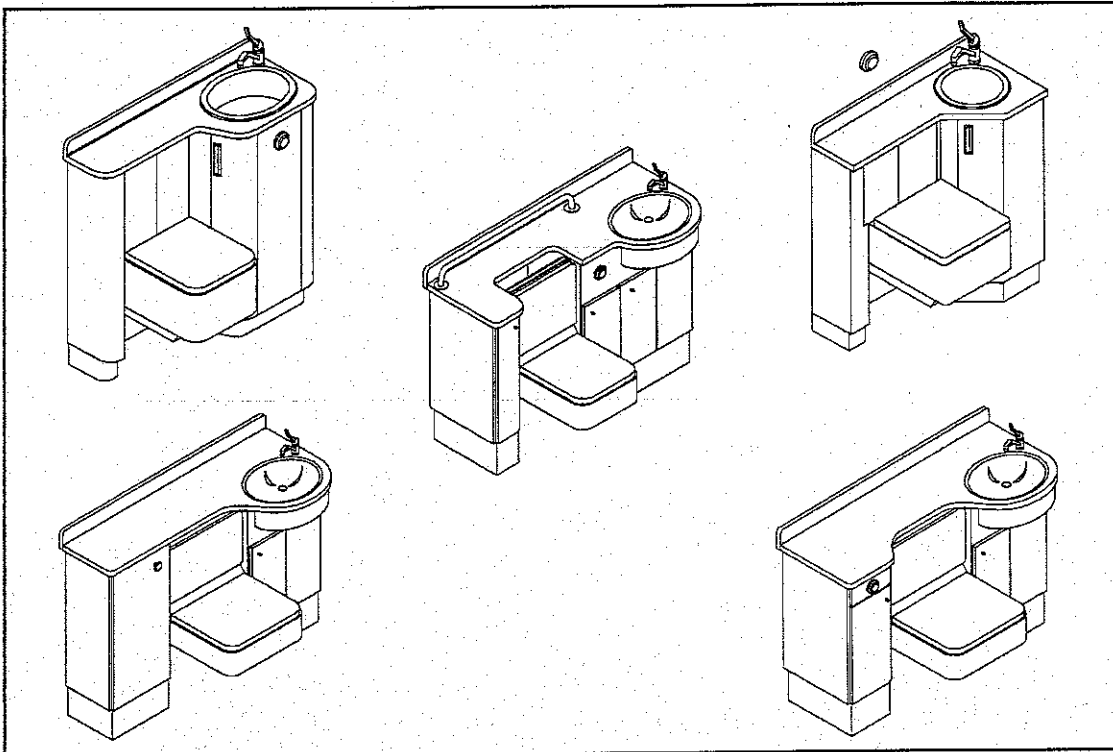


Models 415, 520, and 300

Product No. P590041, P590052, and P590030

SERVICE MANUAL

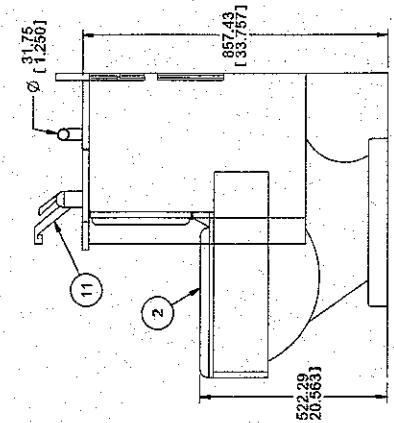
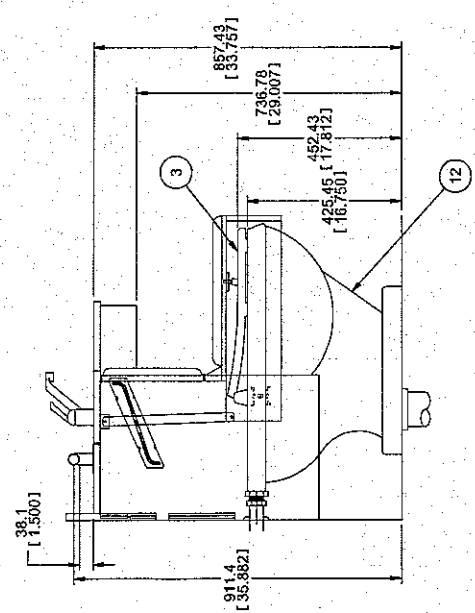
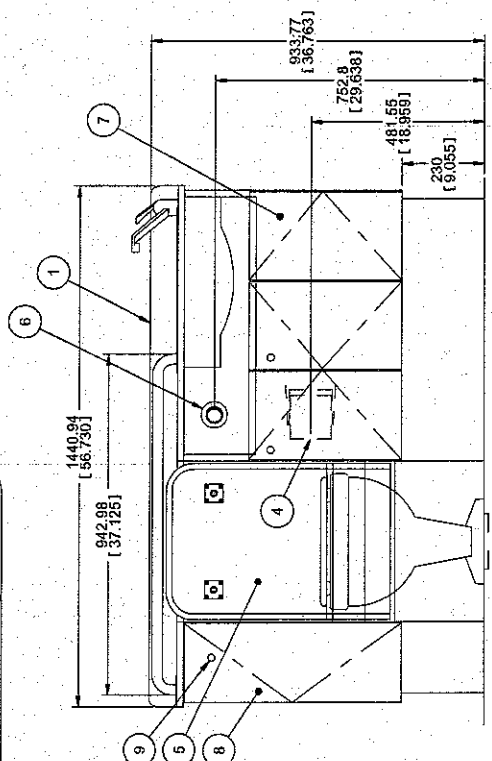
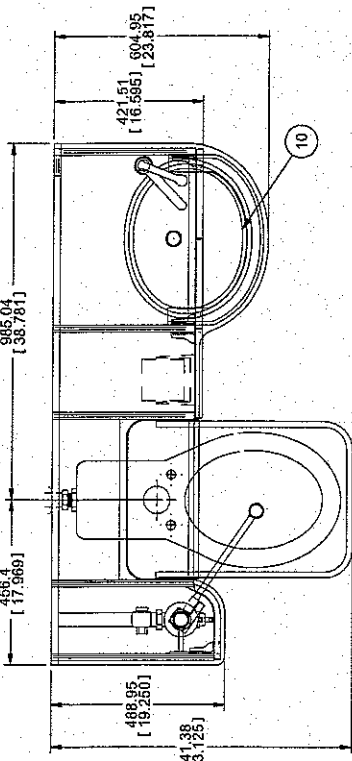
Patient Care Module (PCM) From Hill-Rom



Product No. P5900212/P590041/P590052/P590030

REV	REV DATE	AUTH. DOC.
1	06/05/08	C027701

- NOTES:
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 2. ALL DIMENSIONS ARE IN MILLIMETERS. SECONDARY DIMENSIONS ARE IN INCHES.
 3. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE ± 0.35 [250]
 4. UNLESS OTHERWISE SPECIFIED ALL ANGLES ARE $\pm 3^\circ$.
 5. RIGHT HAND UNIT SHOWN. LEFT HAND UNIT IS MIRROR IMAGE.
 6. WATER CLOSET AND CABINET ARE SHIPPED SEPARATELY.
 7. USE STANDARD WASTE FITTINGS, 76.2 [3.000] OR 101.6 [4.000] DIAMETER WASTE LINES.
 8. CONSULT CODE REQUIREMENTS FOR PROPER PLACEMENT WITHIN ROOMS.
 9. COMPLIANCE IS SUBJECT TO THE INTERPRETATION AND REQUIREMENTS OF THE LOCAL CODE AUTHORITY.



ITEM	PART NO.	DESCRIPTION
1	205735	COUNTER TOP
2	205741	SEAT COVER ASSEMBLY
3	5900-2166-000	TOILET SEAT
4	5900-0010-000	TOILET PAPER DISPENSER
5	143027	RETRACTABLE DOOR ASSEMBLY
6	5900-0062-000	FLUSH BUTTON
7	143026	SINK SIDE DOOR ASSEMBLY
8	143025	PLUMBING SIDE DOOR ASSEMBLY
9	143018	PULLS
10	5900-0011-000	LAVATORY
11	5900-0013-000	FAUCET
12	5900-2157-000	WATER CLOSET

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OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY
INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN
CONSENT OF HILLERBRAND COMPANY, 2208 HILL ROAD, CO. INC.

MODEL 800 FLOOR MOUNT
ROUGH-IN FROM
DO NOT SCALE DRAWING

DRAWN BY: S. SANA
CHECKED BY: R. SCHWIPPS
SCALE: 1/4" = 1'-0"
SHEET: 1 OF 5
DWG. NO.: 142981

RIGHT HAND UNIT
SHOWN, LEFT HAND
UNIT IS MIRROR IMAGE.

CABINET ELEVATIONS

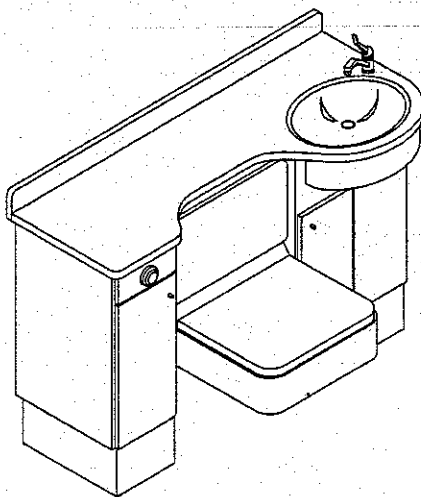
Patient Care Module—Model 520 (P590052)

TECHNICAL DATA SHEET

Introduction

The Patient Care Module (PCM) is a free-standing, wall-mounted cabinet constructed of pre-formed, exterior, marine grade plywood with a polyester-resin overlay finished with high-pressure laminate (see figure 1 on page 1). It conceals the patient water closet, flush valve, and bedpan washer rigid diverter arm.

Figure 1. Patient Care Module



Features

The Patient Care Module Model 520 offers these features:

- A standard, vitreous, china water closet with no pivoting or moving plumbing connections to wear out
- A water closet that is concealed when not in use
- A built-in, bedpan washer, rigid diverter arm
- A location close to the bed (depending on room layout)
- A bedside seat

Options include these:

- A faucet with a wrist-blade water controls, infrared water controls, or gooseneck spout with foot pedal water controls
- Modified cabinet construction, including squared ends for corner installation
- Corian® countertops, with or without an integral Corian® sink
- Utility connections and drain
- Utility mixing valve with temperature gauge

1. Corian® is a registered trademark of E. I. du Pont de Nemours and Company.



STATE OF MICHIGAN

JENNIFER M. GRANHOLM
GOVERNOR

~~DEPARTMENT OF CONSUMER AND INDUSTRY SERVICES~~
LANSING

DAVID C. HOLLISTER
DIRECTOR

DEPARTMENT OF LABOR & ECONOMIC GROWTH

January 27, 2004

Mr. Nathan Linville
Hill-Rom
1069 State Route 46 East
Batesville, IN 47006

Dear Mr. Linville:

At the Construction Code Commission meeting on January 7, 2004, the Plumbing Division presented your request for approval of the Hill-Rom Patient Care Module, Model 200 Floor Mount.

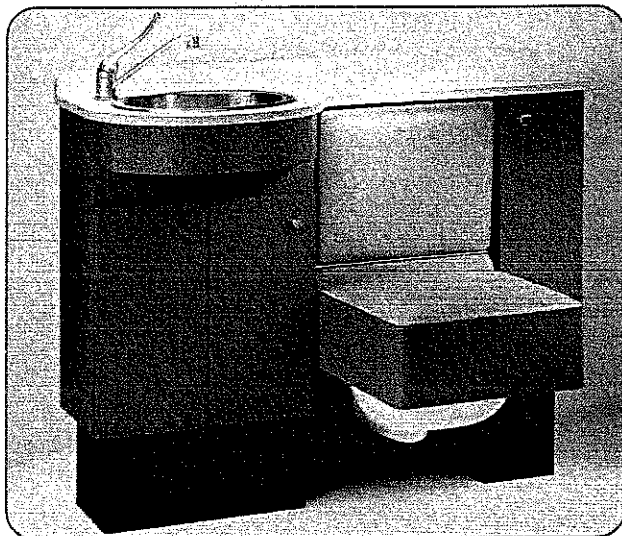
The Construction Code Commission, upon recommendation of the State Plumbing Board, approved the use of the Hill-Rom Patient Care Module, Model 200 Floor Mount with the following conditions:

1. All requirements of the Michigan Plumbing Code shall be applicable.
2. To be installed in hospitals or care institutions only.
3. The request from the hospital or care institutions must be approved by the Health Department having jurisdiction, and meet their conditions prior to review by the State Plumbing Board.
4. Such installations would be in addition to any required hand washing or toilet facilities, and could not be substituted for required facilities.
5. An acceptable means of providing privacy, such as a screen or curtain, must be provided in conjunction with the installation of this equipment.
6. Allowing the installation of such units, which do not conform with standards for water closets and lavatories, shall be based upon need for proper patient care and shall not establish a precedent for considering similar units for other purposes.
7. A properly installed approved vacuum breaker shall be located downstream from the flushometer valve at the required height.
8. A properly installed approved vacuum breaker shall be provided for the bedpan washer connection at the required height location.

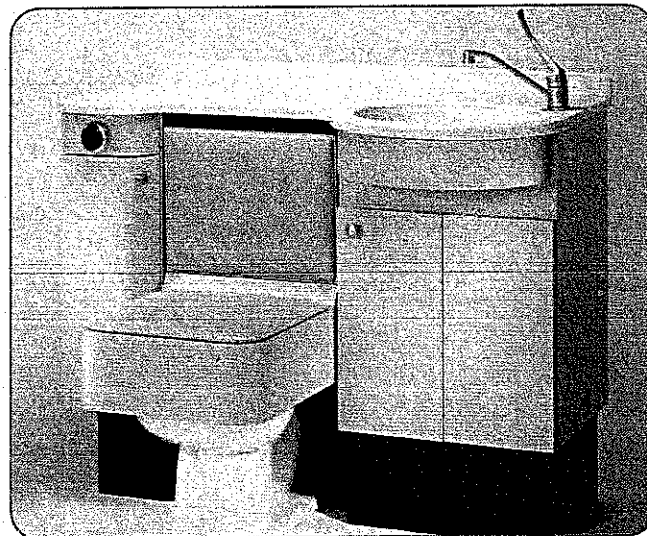
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www.michigan.gov

Hill-Rom Patient Care Module



Model 415

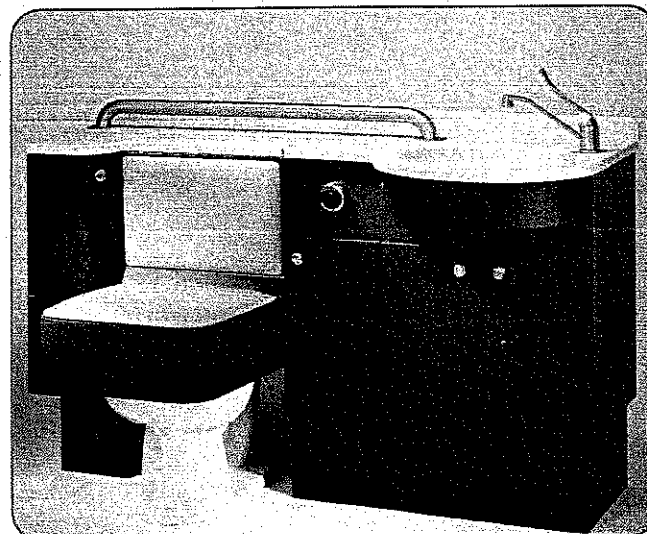


Model 520

A beautifully designed, highly functional solution for bedside patient hygiene — all in one compact unit.

The Patient Care Module is a self-contained, in-room bathroom that can be easily located in close proximity to the patient's bed. It is available in a contemporary, aesthetically pleasing design that will complement the décor of any patient care environment. With our Patient Care Module, the patient's satisfaction and dignity is increased, nursing productivity improved, vital floor space is preserved and expensive construction costs eliminated. The standard module includes a water closet, washing arm for bed pans and other utensils, plus all plumbing hardware. Options include a sink, foot pedals, infra-red controls, utility connections, floor or wall-mounted toilets and several faucet styles.

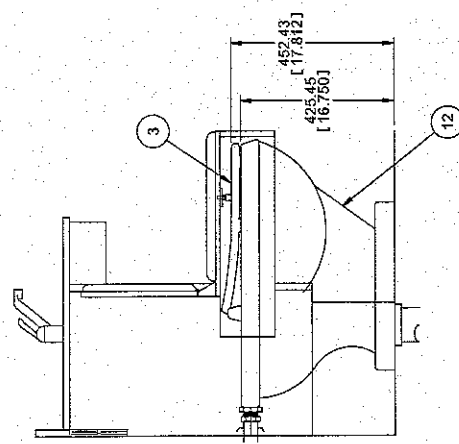
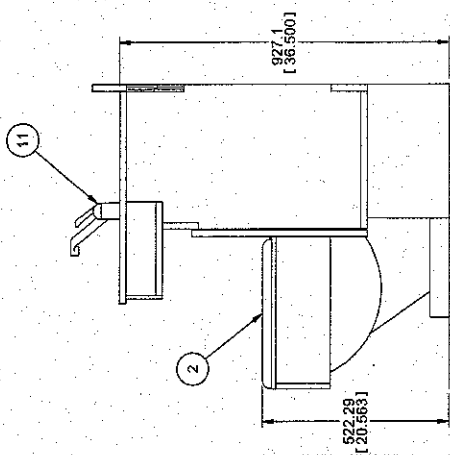
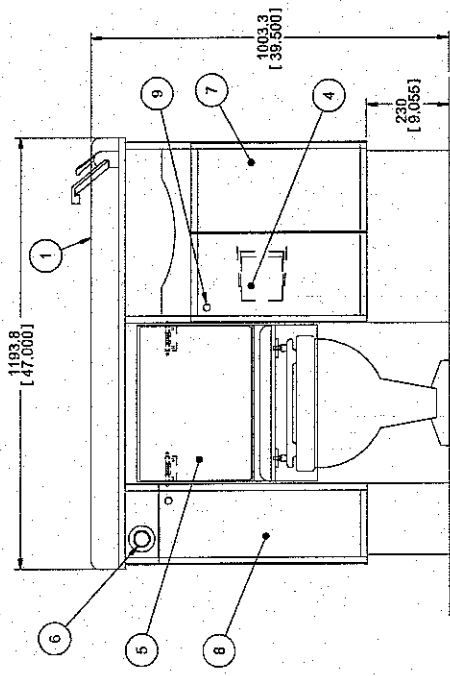
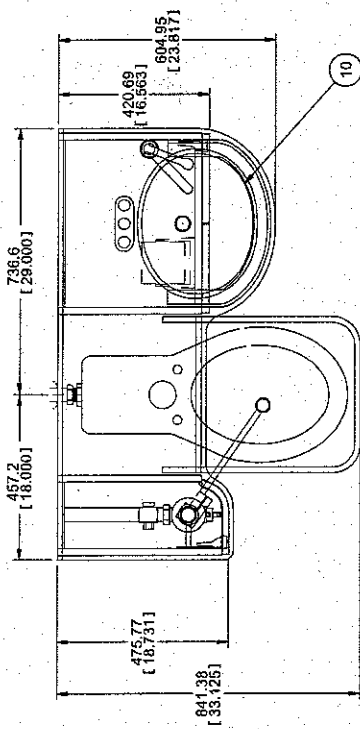
With our Patient Care Module, patients have more freedom to attend to their own personal hygiene needs, allowing caregivers to devote more time to higher acuity demands.



Model 300

REV	REV DATE	AUTH. DOC.
1	06/05/06	0027701

- NOTES:
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 5. WATER CLOSET AND CABINET ARE SHIPPED SEPARATELY.
 6. USE STANDARD WASTE FITTINGS, 76.2 [3.000] OR 101.6 [4.000] DIAMETER WASTE LINES.



ITEM	PART NO.	DESCRIPTION
1	205735	COUNTER TOP
2	205741	SEAT COVER ASSEMBLY
3	5900-2166-000	TOILET SEAT
4	5900-0010-000	TOILET PAPER DISPENSER
5	143019	RETRACTABLE DOOR ASSEMBLY
6	5900-0082-000	FLUSH BUTTON
7	143021	SINK SIDE DOOR ASSEMBLY
8	143020	PLUMBING SIDE DOOR ASSEMBLY
9	143018	PULLS
10	5900-0011-000	LAVATORY
11	5900-0013-000	FAUCET
12	5900-2157-000	WATER CLOSET

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MODEL 520 FLOOR MOUNT ROUGH-IN PCM	
DO NOT SCALE DRAWING	PROJECTION
DRAWN BY: S. SANA	ENGINEER: R. SCHWIPPS
SHEET 1 of 5	SCALE: NONE
DWG. NO.: 142980	

RIGHT HAND UNIT
SHOWN, LEFT HAND
UNIT IS MIRROR IMAGE.

CABINET ELEVATIONS

**Hill-Rom**1069 State Route 46 East
Batesville, IN 47006Date: 4-22-08To: MR. Robert Konyndyk # of Pages (incl. cover): 7Fax #: 517-373-8547From: RON SCHWIPPSPhone #: 812-931-3470Fax #: 812-934-1007*NOT ACCEPTABLE*

Special Instructions:

*BUREAU OF CONSTRUCTION CODES
PLUMBING DIVISION*

Patient Care Module Product Options

Dual Temperature Utility Connection

GENERAL SPECIFICATIONS

1/Specifications

Utility Connection box shall be 14 gauge stainless steel, unless otherwise noted (dimensions may vary slightly for non-standard locations).

Utility Connection box shall have two hose bibs and drain.

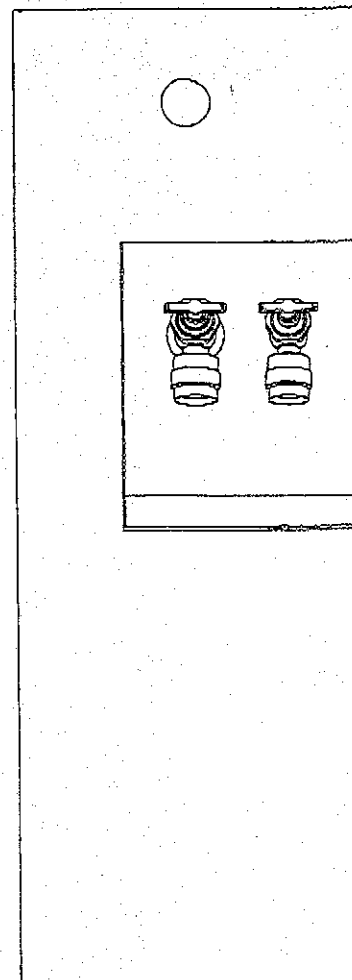
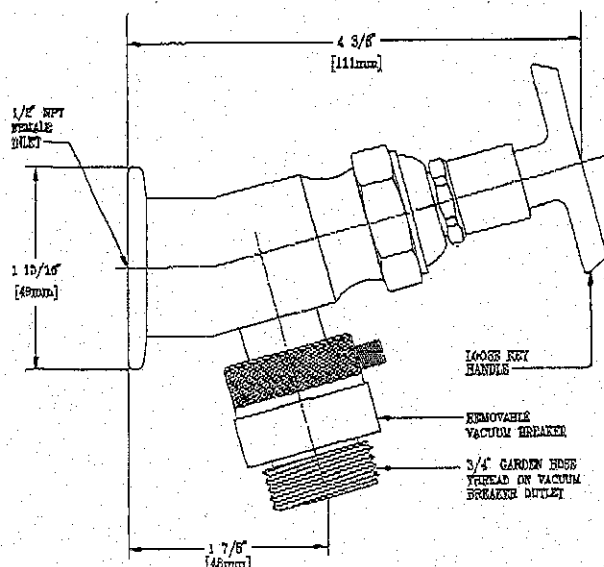
2/Product Description

Sill Faucet

- Loose key handle
- Vacuum breaker
- 1/2" NPT female inlet
- 3/4" G.H. threaded outlet
- Polished chrome finish



T & S Model No. B-0376-POL/RGH
Sill Faucet



3/Ordering Information

Description	Hill-Rom Part No.
Utility Connection Faucet	5900-0090-000
RH Dual Temp Utility Connection Box	5900-2136-000
LH Dual Temp Utility Connection Box	5900-2137-000



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

May 19, 2008

Mr. Scott Robinett
Elkhart Products Corporation
1255 Oak Street
P O Box 1008
Elkhart, Indiana 46515

Dear Mr. Robinett:

I am writing in response to your April 25, 2008 correspondence providing information on the Elkhart Products TECTITE Push Connect Plumbing Fittings, 1 1/4" to 2". Your correspondence addressed our January 31, 2008 product questions.

This office remains concerned with the issue of conformance to NSF 61 as required by Section 605.5 of the code. Accepting a cold water only limitation in our opinion would not protect consumers from having the product installed in hot water distribution systems. We appreciate your efforts to update product literature in addressing this matter.

I order to resolve our concerns I intend to request the State Plumbing Board's position at the June 3, 2008 board meeting. You are welcome to attend the meeting to represent your product located at Conference Room No. 3, 2501 Woodlake Circle, Okemos, Michigan.

You may contact me at (517) 241-9330, if you have any further questions prior to our meeting.

Sincerely,

Robert G. Konyndyk, Chief
Plumbing Division

RGK/mkr

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www.michigan.gov/dleg

Petition Application for Approval of Material, Product, or Method
 Michigan Department of Labor & Economic Growth
 Bureau of Construction Codes & Fire Safety
 P.O. Box 30255
 Lansing, MI 48909

Agency Use Only

09/12/07 \$500 Received
 BCCP-07-014

Application Fee: \$500.00

Authority: 1972 PA 230

Completion: Mandatory

Penalty: Use of material, product, or method will not be approved

The Department of Labor & Economic Growth will not discriminate against any individual or group because of race, sex, religion, age, national origin, color, marital status, disability, or political beliefs. If you need help with reading, writing, hearing, etc., under the Americans with Disabilities Act, you may make your needs known to this agency.

PRODUCT INFORMATION**Nature of Application**☐ Material☒ Product☐ Method of Manufacture or Construction☐ Component**Code Under Which Approval is Sought**☐ Building (140)☐ Electrical (115)☐ Mechanical (130)☒ Plumbing (98)

Name of Material, Product or Method of Manufacture (limit to one item per application)

1 1/4" - 2" TECTITE PUSH CONNECT PLUMBING FITTINGS

Other Identification (Model Number) 200 1 1/4" - 2" 203 1 1/4" - 2" 204 1 1/4" - 2" 206 1 1/4" - 2"
 2062 1 1/4" - 2" 207 1 1/4" - 2" 211 1 1/4" - 2" 212 1 1/4" - 2" 217 1 1/4" - 2"

Description (use additional sheets if necessary)

GUNMETAL FITTING BOOBS WITH EPDM O-RINGS, STAINLESS STEEL GRAB RINGS, GLASS FILLED NYLON PROTECTION RINGS + ZYTEL END CAPS

Intended Use (use additional sheets if necessary)

FOR USE IN RESIDENTIAL + COMMERCIAL POTABLE WATER PLUMBING SYSTEMS USING SEAMLESS COPPER WATER TUBE MANUFACTURED TO ASTM B62 STD. + CPE PLASTIC PIPE + TUBE MANUFACTURED TO ASTM D2846 STD.

Data Submitted☒ Letter☐ Manual☐ Standards☒ Installation Instructions☐ Display Catalog**Reports**☐ ICC - NES☐ BOCA - NES☐ ICBO☐ SBCC☐ NRB☒ Other☒ Product Sample or Model☐ Prior Approvals by Other Agencies☐ Recommendations by Model Code Bodies

Laboratory Test By THIRD PARTY CERTIFIED BY IAPMO TO ASSE 1061 AND ANSI/NSF 61 STANDARDS (CERTIFICATIONS ATTACHED)

Pilot Service Experience and Conditions (use additional sheets if necessary)**Restrictions for Use** (use additional sheets if necessary)**APPLICANT** (Note: All correspondence will be sent to this address)

NAME OF COMPANY

APPLICANT NAME

ADDRESS

CITY

STATE

ZIP CODE

TELEPHONE NUMBER (include Area Code)

APPLICANT SIGNATURE (Must be an original signature)

DATE

FAX NUMBER (include Area Code)

OBTAIN Q.C. BACK UP DATA FOR
 THE TEST AGENCY



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

October 19, 2007

TO: Members of the State Plumbing Board
FROM: Robert G. Konyndyk, Chief, Plumbing Division *RMK*
SUBJECT: Product Approval Request for Elkhart Products TECTITE Push Connect Plumbing Fittings, sizes 1¼", 1 ½", and 2"

The applicant has requested product approval to provide acceptance for a push connect fittings having O rings for Copper, CPVC and PEX piping systems. The products do not have a conformance standard to be referenced in the codes.

APPLICANT REPRESENTATIVE:

Mr. Scott Robinett

APPLICANT:

Elkhart Products Corporation
1255 Oak Street
P O Box 1008
Elkhart, Indiana 46515

AUTHORITY:

Section 21 of Act 230, 1972 being section 125.1521 of the Michigan Compiled Laws.

PRODUCT:

Elkhart Products Push Connect – Plumbing Fittings

Tectite Push Connect – Wrot Copper Sizes 1¼", 1 ½", and 2"

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BUREAU OF CONSTRUCTION CODES
P.O. BOX 30254 • LANSING, MICHIGAN 48909
Telephone (517) 241-9330 • Fax (517) 373-8547
www.michigan.gov

APPLICATION:

Copper tubing connections by mechanical joints. Plumbing fitting consisting of elastomeric seal and corrosion resistant tube grippers designed for use in potable water systems with Copper, CPVC, and/or PEX piping designed to their appropriate ANSI approved piping standards.

LABORATORY TESTS:

IAPMO partial test for NSF 61 compliance #722-T07022-A

APPROPRIATE CODE SECTION:

Section 605 Water Distribution, Joints and Connections

CONDITIONS OF USE AND INSTALLATION:

1. All requirements of the Michigan Plumbing code shall be applicable.
2. Shall be installed in accordance with manufacturer's installation instructions.
3. Shall not be accepted for underground use.

RECOMMENDATION:

A recommendation cannot be provided without further evaluation of information requested of the submitting agent as contained in the letter to Mr. Robinett, dated October 19, 2007.

RGK/mkr



Elkhart Products Corporation

August 30, 2007

Michigan Department of Labor & Economic Growth
Bureau of Construction Codes & Fire Safety
P.O. Box 30255
Lansing, MI 48909

Attn: Mr. Robert Konyndyk

Subject: TECTITE Push Connect Plumbing Fittings

Elkhart Products Corporation is formally requesting approval from the Michigan State Construction Code Commission for the use of our new "TECTITE" line of copper alloy push connect plumbing fittings within your jurisdiction. To aid with your review of this request I have included the following materials:

1. Petition Application for Approval of material, Product, or Method (Form BCCF-247, Rev. 8/05)
2. Application Fee
3. TECTITE 1 1/4" Coupling Assembly Drawing
4. TECTITE Product Data Sheet
5. TECTITE Engineering Specifications
6. TECTITE Installation and Specifications Manual
7. IAPMO ASSE 1061 Test Report
 - a. 722-07023
 - b. 722-06017-R
8. IAPMO ANSI/NSF 61 Test Reports
 - a. 722-T07022-A
9. One 1 1/4" TECTITE Push Connect Coupling with Removal Tools

Best Regards,

Scott Robinett
Project Engineer
Elkhart Products Corporation
1255 Oak St. P.O. Box 1008
Elkhart, IN 46515
(574)264-3181

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	69002S	1 1/4" COUPLING
2	2	65637S	1 1/4" O-RING
3	2	65638S	1 1/4" PROTECTION RING
4	2	65639S	1 1/4" GRAB RING
5	2	65634S	1 1/4" RETAINING CAP

MARK "EPC cUPC® NSF 61 CU/CPVC"
IN AREA SHOWN - ONE END ONLY

10088011

REV A

TOLERANCES UNLESS OTHERWISE SPECIFIED

1 PL. DEC. 2 PL. DEC. 3 PL. DEC. ANGLES

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REMOVE ALL BURRS

BREAK ALL SHARP EDGES .015

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REV 1-2

REV 1-1

TEC-TITE 1 1/4" COUPLING

10088011

SR 7/18/2006

REV A

Elkhart Products Corporation

10088011



November 20, 2007

Michigan Department of Labor & Economic Growth
Bureau of Construction Codes & Fire Safety
P.O. Box 30255
Lansing, MI 48909

Attn: Mr. Robert Konyndyk

Subject: TECTITE Push Connect Plumbing Fittings Product Approval

Thank you for your recent review of our TECTITE product approval application. The following information is in response to your letter dated October 19, 2007. Sorry about the delay in getting this back to you.

1. The current version of 1 1/4" - 2" TECTITE fittings are intended to be used with copper and CPVC only. We are working on a PEX compatible version of this product and expect to have this on the market in early 2008. Once product certification through IAPMO for the PEX version is complete I will send in another product approval submission for TECTITE with PEX.
2. A product catalog and price sheet for the 1 1/4" - 2" TECTITE product line is included with this letter.
3. I have included an e-mail message from our o-ring supplier that contains testing information for the o-ring material with chlorinated water. Test results showed no degradation of the surface of the material after 8 weeks of immersion in 50ppm of an aqueous chlorine solution. Proposed federal drinking water standards suggest an upper limit of 4ppm of chlorine in drinking water supplies. Elkhart Products has determined that there is no risk of failure of the o-ring seal due to long term exposure to federally proposed chlorinated water standards. As a result, TECTITE products carry a 50 year warranty.
4. TECTITE fittings can be used in underground installations when it is permissible by local code.
5. The ASSE 1061 standard is included with this letter.
6. IAPMO test reports 722-06017-R & 722-07023 verify conformance to ASSE 1061 standards. ASSE 1061, Section 4.2.4 states, "Cast copper alloy, wrought copper alloy and copper alloy solder joint fittings shall comply with the dimensional requirements of ASME B16.18 and B16.22".
7. The 1 1/4"-2" TECTITE fittings have been certified by IAPMO to conform to NSF 61 requirements for room temperature and cold water applications only.



Elkhart Products Corporation

8. There are two suppliers for the fitting bodies; Yorkshire Fittings (YF) supplies the bodies that are used to make male and female adapters and Siam Fittings supplies the remainder of the bodies. EPC shares the supply chain with YF and uses their suppliers; YF has determined that they can produce adapter bodies at a lower cost than Siam. The remainder of the components are produced by companies that specialize in the materials used (i.e. rubber, stainless steel & plastics). All of the components used conform to NSF 61 requirements and have passed the testing requirements of ASSE 1061.

Best Regards,

Scott Robinett
Project Engineer
Elkhart Products Corporation
1255 Oak St. P.O. Box 1008
Elkhart, IN 46515
(574)264-3181



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

January 31, 2008

Mr. Scott Robinett
Elkhart Products Corporation
1255 Oak Street
P O Box 1008
Elkhart, Indiana 46515

Dear Mr. Robinett:

I am writing in response to your November 20, 2007 correspondence providing information on the Elkhart Products TECTITE Push Connect Plumbing Fittings, 1 1/4" to 2". Your correspondence addressed our October 19, 2007 product questions.

It is the opinion of this office that the product response is not satisfactory and we are unable to forward your request to the board for initial consideration.

Our opinion is based upon the following facts:

1. The testing does not substantiate conformance to NSF 61 as required by Section 605.5 of the code. Accepting a cold water only limitation in our opinion would not protect consumers from having the product installed in hot water distribution systems. It has been noted that your product literature does not address this matter.
2. The code in section 303.4 requires potable water supply fittings to be third party certified with ongoing surveillance. Your submitted documentation does not substantiate this ongoing process.
3. Does your firm intend to list these fittings with ASSE conformance to standard ASSE 1061, Removable and Non-Removable Push Fit Fittings?

You may contact me at (517) 241-9330, if you have any further questions prior to your written response.

Sincerely,

Robert G. Konyndyk, Chief
Plumbing Division

RGK/mkr

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Elkhart Products Corporation

April 25, 2008

Michigan Department of Labor & Economic Growth
Bureau of Construction Codes & Fire Safety
P.O. Box 30255
Lansing, MI 48909

Attn: Mr. Robert Konyndyk

Subject: TECTITE Push Connect Plumbing Fittings

This letter is in response to your last correspondence dated January 31, 2008 and a follow up conversation on March 4, 2008 concerning our request to approve 1 1/4" - 2" TECTITE push-connect plumbing fittings for use in the state of Michigan. I apologize for the delay in responding, it took longer than I expected to get the new brochures done.

The concerns noted in your letter have been addressed as follows:

1. Product conformance to ANSI/NSF 61 has only been demonstrated/certified for these fittings using room temperature water. The product did conform to the requirements of ANSI/NSF 61 at continuous hot temperature (180° F) and exposure to pH5 (acidic) water. The product *did not* conform at continuous hot temperature and exposure to pH10 (alkaline) water. The only element that was outside the acceptable limits at pH10 was lead; all other metals were within acceptable levels for ANSI/NSF 61 at both test temperatures and both pH levels. Health risks under these conditions would be unlikely if the product is used in a potable water system with normal pH levels. However, due to the fact that the product is not certified for use with commercial hot water we have added wording to our product literature that states the product is for use with room temperature potable water. The relevant literature is included in the attached documents.
2. Ongoing surveillance of our TECTITE product line is supplied by IAPMO R&T and is done on a regular basis. A copy of a recent Continuous Compliance Inspection Report is included in the attached documents for your reference.
3. The product is certified and listed as conforming to ASSE 1061. A copies of the listing documents are included for your reference.

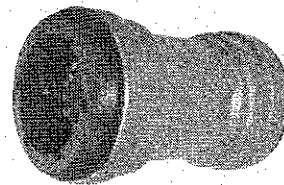


Elkhart Products Corporation

For your convenience I have also attached copies of all our previous correspondence.

Sincerely,

Scott Robinett
Project Engineer
Elkhart Products Corporation
1255 Oak St. P.O. Box 1008
Elkhart, IN 46515
(574)264-3181



Large Diameter TECTITE Product Data Sheet

Manufacturer:

Elkhart Products Corporation
1255 Oak Street
Elkhart, Indiana 46515
Telephone 800-284-4851; 574-264-3181; FAX 574-264-4835
Internet: www.elkhartproducts.com

System Overview:

The need to provide energy efficient, safety conscious and cost effective installation has driven to the development of push-connect fitting technology. TECTITE push-connect fittings address these criteria by joining plumbing tube in the most efficient, safe, and cost effective manner available today. TECTITE fittings are designed to join Copper and CPVC tube in the 1 1/4" to 2" size range.

System Benefits:

- No special tools required for installation.
- Reduced installation time.
- No Wire Brush, No Flux, No Solder, No Flame.
- No Mess, only a clean, neat, appearance after installation – no heat, no tarnish, no solder buildup.
- Fitting bodies meet ASME B16.22 & B16.18 performance standards.
- EPDM o-ring seal.
- Nylon guide ring.
- 316 Stainless Steel grab ring.
- Zytel end caps.
- TECTITE Fittings are removable.
- TECTITE Fittings may be re-used.
- TECTITE fittings surpass rigorous mechanical and health effects performance requirements, including ASSE 1061, ANSI/NSF 61, ANSI/NSF 14.
- 50 year Warranty

Approvals:

IAPMO UPC/IAPMO File number 4951
State of Massachusetts File number P1-1107-84

Additional Approvals & Listings will be added to this list in the future.



The TecTite™ System Advantage

TecTite™ fittings are a heat free method for joining Copper and CPVC and are designed to save time and money on installations. Installing a TecTite joint is simple and requires no extra materials beyond the fitting for Copper and CPVC tube installations.

TecTite large fittings provide plumbing system design flexibility by allowing you to join lines with just one fitting.

The fittings simply push together in seconds to create a perfect joint. No torches and no solder are required. They are designed to join lines from 1¼" to 2", meet a wide variety of plumbing codes and can be used in potable water (cold only), hot water heating, chilled water systems and compressed air.

And when your design specifications change, simply remove the fitting and reuse it in any other part of the system for a clean and efficient installation. What's more TecTite fittings carry a 50-year warranty. So the next time you need to make the right connection over and over again, choose TecTite from Elkhart Products.

BENEFITS TO THE PUSH FIT SYSTEM



HEAT FREE

*Reduces fire hazard
Utilizes push fit technology*



- *Push fit*
- *Tool free*
- *Ideal for service and repair*
- *1¼" – 2" diameter potable water (cold only) systems*
- *End cap acts as a guide assuring straight insertion*
- *True "O-ring" design for leak free seals*
- *Pre-lubed for quick installation*

The use of solder, flux, heat or special pressing tools is eliminated with TecTite. This reduces cost of materials (solder, flux, and torch fuel), insurance cost (due to "Hot Work" permits) and time required on-site for adhesive curing and system flushing. TecTite is a removable and reusable fitting system that provides the ultimate in flexibility in plumbing system assembly.

Material Compatibility

TecTite fittings are designed to operate at temperatures from 0° to 250°F and a maximum working pressure of 200 psi. TecTite fittings are designed for use with ASTM B88 hard drawn and annealed Copper tube, type K, L, or M, in the 1¼" to 2" size range. TecTite fittings for CPVC water tube per ASTM D2846/2846M. All TecTite fittings carry a 50-year warranty ensuring your push connection will stay perfect.



FAST & SIMPLE

Easy installation. Reduce installation time by 1/3. Connect in under 8 seconds.



CLEAN

No glues, fluxes or solder needed.



NO CONSUMABLE MATERIALS

Reduces material cost and storage

Grips and Holds Copper and CPVC.

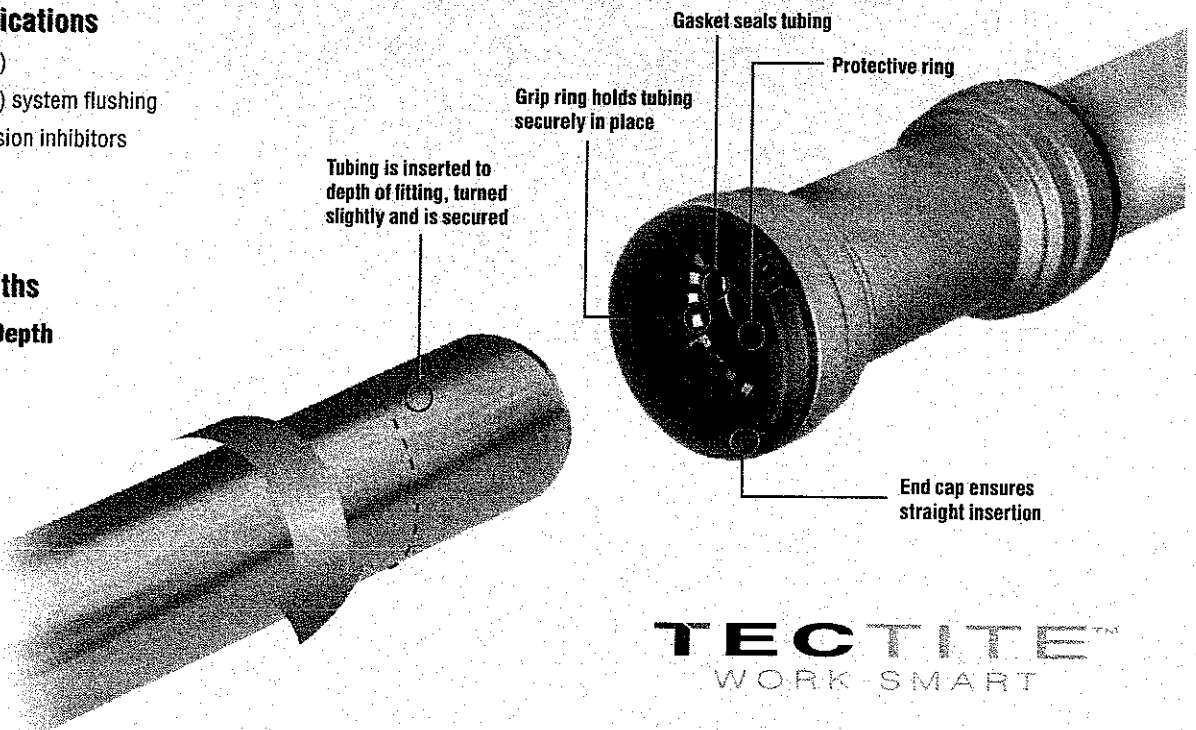
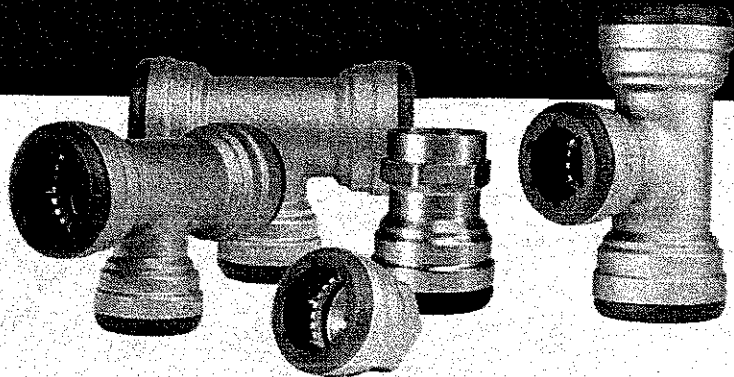
The fittings should be installed at a minimum of 2" apart to allow easy access should disassembly be required.

Typical Fluid Applications

- Potable water (cold only)
- Potable water (cold only) system flushing
- Chilled water with corrosion inhibitors
- Hydronic heating
- Rainwater/greywater

Fitting Socket Depths

Tube Size	Socket Depth
1¼"	2 ¼"
1½"	2 ⅞"
2"	2 ¾"



TECTITE™
WORK SMART

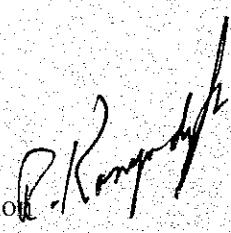


JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

May 22, 2008

TO: Members of the State Plumbing Board
FROM: Robert G. Konyndyk, Chief, Plumbing Division 
SUBJECT: Advanced Drainage Approval Request for ADS N-12 WT IB

The applicant has requested approval to provide product acceptance for ADS N-12 WT IB, High-Density Polyethylene Pipe for Storm Sewer applications sizes 12" through 60".

APPLICANT REPRESENTATIVE:

Mr. Christopher M. Owen

APPLICANT:

Mr. Christopher M. Owen
Advanced Drainage Systems, Inc.
43544 Lancelot Dr.
Canton, Michigan 48188

AUTHORITY:

Section 21 of Act 230, 1972 being section 125.1521 of the Michigan Compiled Laws.

PRODUCT:

ADS N-12 WT IB, High-Density Polyethylene Pipe for Storm Sewer applications sizes 12" through 60"

APPLICATION:

Storm sewer

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Members of the State Plumbing Board

Page 2

May 22, 2008

APPLICABLE CODE SECTION:

Section 303.3 Plastic pipe and fittings (conformance to NSF 14)

Section 303.4 Third party testing

Section 312.2 Testing

Table 1102.4 Building Storm Sewer Pipe

TEST REPORTS:

Conformance to the ASTM F2306

ADDITIONAL INFORMATION:

WT (designation) – Water tight joints

ST (designation) – Soil tight joints

CONDITIONS OF USE AND INSTALLATION:

1. The product may be installed for gravity flow storm sewer applications only.
2. All requirements of the Michigan Plumbing Code shall be applicable.
3. The product shall only be used from manhole to manhole. The only permissible fittings will be couplings.
4. Shall be installed in accordance with manufacturer's installation instructions.
5. Shall be water tight joints conforming to ASTM D 3212

RECOMMENDATION:

Staff has requested additional information from the manufacturer. Prior to that information review a recommendation cannot be given.

RGK/mkr



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

May 22, 2008

Mr. Christopher M. Owen
Advanced Drainage Systems, Inc.
43544 Lancelot Dr.
Canton, Michigan 48188

Dear Mr. Owen:

I am writing in response to your May 5, 2008 correspondence clarifying our earlier product approval application question for the ADS N-12 WT IB, High-Density Polyethylene Pipe for Storm Sewer applications sizes 12" through 60".

First, thank you for your clarifications and detailed documentation. Second, I have additional questions which are listed as follows:

1. Please confirm that the TRI / Environmental, Inc. test reports for conformance to ASTM F 2306 for the Type S (as identified by them) are for your ADS N-12 WT IB product. Further, the test reports are all in error on the second page which reads **SECTION 6.2.3 INSIDE DIAMETER**. They should read **SECTION 6.2.2 INSIDE DIAMETER**.
2. Test reports for conformance to ASTM F 2306, Section 6.6.3.3 shall be provided to address the joint connections ability to meet standard ASTM D 3212, Section 5.1. The test report listed in item number one above does not indicate any testing to Section 6.6.3.3.
3. Finally, please verify in writing that your certificate request does not include fitting consideration.

If you have any further questions prior to your written response, please contact me at 517/241-9330.

Sincerely,

Robert G. Konyndyk, Chief
Plumbing Division

RGK/mkr

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IN CHINA THEY DON'T THINK OF IT AS BREAKING THE RULES. BUT APPARENTLY IN MICHIGAN THEY DO.

The Michigan Construction Code Commission recently voted to deny approval of imported cast iron soil pipe and fittings from China for use on state construction projects in the State of Michigan. In the Michigan case, a U.S. importer, MWI, had requested official approval of the products they were reselling. They were denied approval after Michigan regulators were not satisfied that the products they were outsourcing conformed to applicable standards referenced in the Michigan Plumbing Code.

MWI argued that they were the manufacturer for the purposes of meeting the manufacturing standard, even though they do not own or operate any manufacturing plants. They also argued that the Chinese-made products met the applicable manufacturing standards simply because they were listed with a third party certifier. However, the standard clearly defines the manufacturer as "the entity that cast the pipe and fittings." Only the foundry that poured the molten iron can verify quality control procedures were followed at the time the material was cast. No third party certifier or reseller can do that after the time of manufacture.

The problem is that most U.S. importers purchase cast iron soil pipe and fittings from multiple foundries in China. The name of the producing foundry frequently is not stenciled on or cannot be readily identified on the pipe being sold (which is required by the standard). This makes it difficult, if not impossible, to identify which foundry produced the material. Also, the pipe sometimes is only marked with the month and the year it was manufactured, not the date of manufacture (which is also a requirement of the standard). These lapses make it impossible for consumers to tie back pipe or fittings to chemical, physical and dimensional testing reports at a given foundry, as required by the

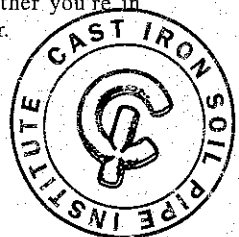
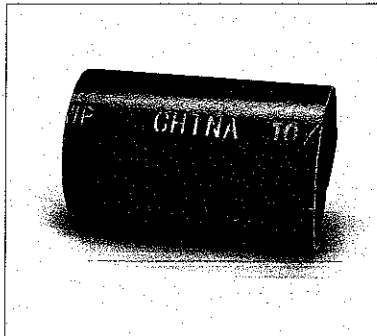
standard. If there was a quality problem, how would the purchaser know what day the material was made, or which foundry made it, so they could ask for test reports that would verify the quality?

Requiring products to conform to applicable manufacturing standards is essential in today's world of global outsourcing. The news headlines demonstrate all too well what can happen if they are not followed. Customers should have the peace of mind of knowing that overseas manufacturers have diligently followed all

the necessary quality control requirements embedded in the standards. ASTM and Cast Iron Soil Pipe Institute (CISPI) standards for pipe and fittings require consistent tensile strength, chemical and dimensional testing and radiation testing of raw materials. These tests must be done during the manufacturing process by the manufacturer to ensure consistent quality and to be in compliance with the standard. Anything less will not adequately protect the customer.

Over and over Michigan regulators requested submittals from MWI in an effort to satisfy themselves that the subject products were acceptable. Over and over, the regulators found deficiencies and unresolved questions. Specifiers examining these same test reports would be left to guess whether the products were manufactured in compliance with the standard. On the other hand, NSF International has approved CISPI's quality control program to ensure that pipe and fittings manufactured in the U.S. and inspected by CISPI and NSF are compliant with the CISPI 301 and ASTM A 74 manufacturing standards. Specifying domestic-made cast iron soil pipe and fittings stamped with CISPI's CI collective trademark assures that products are being produced in accordance with the standards.

Now that's peace of mind, whether you're in Michigan, or any other state for that matter.





JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
LANSING

KEITH W. COOLEY
DIRECTOR

May 15, 2008

TO: Robert G. Konyndyk
Tennison Barry

FROM: Scott D. Fisher

SUBJECT: Settlement Agreements
Daniel E. Hogan, Complaint No. M 05-0445
Christopher J. Hogan and John P. Hogan, Complaint No. P 05-0445

Attached are your respective division's copies of the above referenced agreements. There is no provision in either agreement that requires board approval. However, I would expect that you both will inform your boards of the action taken and place a copy in each individuals licensing file.

My staff will monitor the receipt of payments over the course of the next year and advise you of any problems we may encounter.

Thank you for your assistance in these matters.

SDF/sb

Attachment

cc: Beth Aben

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**STATE OF MICHIGAN
DEPARTMENT OF LABOR & ECONOMIC GROWTH
BUREAU OF CONSTRUCTION CODES**

In the Matter of:

Daniel E. "Dan" Hogan, d/b/a
Hogan Plumbing & Heating
1190 Red Apple Road
Manistee, Michigan 49660

BCC Complaint No. 05-0445-M

Mechanical Contractor License No. 71-06067

(Respondent)

_____ /

Entered into
this 16 day of April 2008
by the Bureau of Construction Codes and the Respondents

SETTLEMENT AGREEMENT

The Michigan Department of Labor and Economic Growth (hereafter the Department), Bureau of Construction Codes (hereafter the Bureau), having described its concerns for the public's safety and welfare in its Second Amended Statement of Intent to Commence Proceedings and Notice of Opportunity to Show Why Such Proceedings Should Not Be Commenced Pursuant to the Forbes Mechanical Contractors Act, issued November 19, 2007, (hereafter the Second Amended Statement of Intent), a copy of which is attached hereto and incorporated herein as an integral part of this Settlement Agreement, hereby agrees to resolve those concerns as follows:

WHEREAS, Attorney Timothy F. Sheridan, representing Respondents Daniel E. Hogan, (not in attendance) spoke on behalf of the Respondent at an informal compliance conference on March 18, 2008. Attorney Sheridan explained the facts and circumstances surrounding his